University News

A FORTNIGHTLY CHRONICLE OF HIGHER EDUCATION & RESEARCH JUNE 15, 1980

- Priorities in Educational Development
- New Curriculum for Biology
- Survey of University Hostels
- Role of Science & Tech. Edn. in National Development
- Environment Research Panel

A bird's eye view of Calcutta Varsity Master Plan

UNIVERSITY
NEWS

Vol. XVIII JUNE 15
No. 12 1980

A Fortnightly Chronicle of Higher Education Price 80 Paise

IN THIS ISSUE

Sixth Plan : Priorities in Educational Development 326

Campus News

Peaceful and disciplined examinations held at Jabalpur 329
New campus for Calcutta Varsity 329
Survey of university hostels 330
New curriculum for Biology 331
Bicentenary of Indian Press 331
Card and code system for examiners 332
IAS advisers for Bihar VCs 332
SNIPES lays stress on physical conditions 333
AICS approval for new sports policy 334
UGC history panel stresses emphasis on research 335
Pondicherry law college steps up publication programmes 336
Theses of the Month 337
Additions to AIU Library 341
Classified Advertisements 342

Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

Editor : ANJNI KUMAR

Role of Science & Technical Education in National Development

B. Ramachandra Rao*

In a rapidly changing environment, the concept of education has undergone a dramatic change. Logically it has acquired a new dimension in order to meet the emerging and foreseeable needs of society. Its goals, objectives and functions are no longer viewed merely in terms of conservation, transmission and dissemination of knowledge. What we need today are the preparation of functional skills and inculcation of scientific temper which have acquired a new significance in the educational systems of both the developed and developing societies.

No wonder, education in our times has played a crucial role in achieving a spectacular material transformation in the human and social environment. There is enough evidence, backed by empirical researches and general studies, to show that education has been a crucial factor in rapidly increasing the GNP of the developed societies during the last few centuries. This rapid increase in the material advancement of these societies was primarily achieved by the application of science and technical education to agriculture and industry, say, for example, Germany during the last three decades of the nineteenth century and the USSR during the thirtees and forties of the twentieth century registered a tremendous growth in their economy through the process of extending the frontiers of scientific knowledge as well as improving and adapting the existing knowledge to meet the demands of their national goals.

It is against this background that we have to analyse the crucial role of education in eradicating our poverty, illiteracy, ignorance and improving the impoverished rural environment and the quality of life of our masses who have suffered socio-economic exploitation and humiliation for a number of centuries. Indeed, this is a challenging task which would call for the exploitation of our material and manpower resources to the fullest extent. It is the human being who is the cause and consequence of underdevelopment, and the subject and the object of development. It is, therefore, necessary to identify an appropriate approach to education in order to initiate the right kind of developmental activities utilising our human resources.

The system of education which the country inherited at the time of Independence was found to be incapable of fulfilling the task of developing human resources for the modernisation of our economy. True, attempts have been made from time to time by the policy-makers to reorient the educational system to meet the needs and the requirements of the growing economy. Most of the recommendations made by the various educational committees

---

Vice-Chairman, UGC, New Delhi.

MARATHWADA UNIVERSITY AURANGABAD

Advertisement No. Estt. /RO/27

Applications in the prescribed form from candidates fulfilling following conditions of qualifications and experience, are invited for the post of Registrar in the pay-scale of Rs. 1500-*50-1700-75-2000-125/2-2250 (Revised)* plus other admissible allowances, so as to reach the University Office on or before **July 5, 1980.**

Qualifications and Experience

(i) Master's Degree at least in Second Class of a Statutory Indian University or a Degree recognised as equivalent thereto

(ii) At least ten year's administrative experience in a responsible executive position in an educational institution, preferably in a University or in a Government Department.

OR

At least five year's teaching experience *in a College or a University* Department and five years' administrative experience.

(iii) Proficiency in Marathi and English Languages.

Other things being equal, preference can be given to the candidates belonging to the Scheduled Caste and Scheduled Tribes.

Candidates applying for the post of Registrar shall not be below 35 years and above 50 years of age at the time of appointment. This age-limit shall *not apply to candidates who are already in the service of the University.* The Executive Council may relax the prescribed qualifications, experience and age-limit in suitable cases.

The candidate selected for the post of Registrar shall be appointed on probation for a period of two years in the first instance and on expiry of the said period and on his having completed the probationary period satisfactorily he may be confirmed by the Executive Council.

Seven copies of applications together with seven copies of each of the testimonials, if any, giving particulars in the prescribed form (which will be supplied on receipt of a Crossed Indian Postal Order of Rs 3/- towards the cost of the form) should be sent to the Registrar on or before the prescribed date. Testimonials should be attested by a Principal of a College or Member of the Senate of the Marathwada University or by a Gazetted Officer. The prescribed application forms will be supplied to the candidates on request accompanied by a self-addressed envelope (23 x 10 cms, bearing postal stamps worth Rs. 2/- for the postage.

Candidates who are employed at present must submit their applications through their employers.

Canvassing, direct or indirect, will be a disqualification

REGISTRAR

Indian school of Mines

DHANBAD

Advt No 420004/80 **May 23,1980**

I. Indian School of Mines, a 'deemed University' under the UGC Act, invites applications for the following faculty positions:

(a) **One Professor** for the Deptt of Pet Engg with specialisation in Pet Engg.

(b) **Two Assistant Professors**

One in the Deptt of Pet Engg with specialisation in Pet Engg.
One in the Deptt of Electronics & Instrumentation with specialisation in Electronics.

(c) **Four Lecturers**

One in the Deptt of Min Engg with specialisation in Mine Surveying.
One in the Deptt of Engg & Min Machinery with specialisation in Elec Engg.
Two in the Deptt of Engg & Min Machinery with specialisation in Mech Engg.

All posts are permanent.

Pay scale and upper age limit

Professors	Rs 1500-2500/-	(50 years)
Asstt Professors	Rs 1200-1900/-	(40 years)
Lecturers	Rs 700-1600/-	(35 years)

Allowances admissible as per Govt of India Rules sanctioned from time to time. Total emoluments currently amount to Rs 1070.50 at the Rs 700/- stage; Rs 1560.00 at Rs 1200/- stage; Rs 1960.00 at the Rs 1500/- stage and Rs 2360.00 at Rs 1900/- stage..

Upper age limit relaxable in respect of certain specified categories of persons and for candidates otherwise considered specially suitable.

II. Specialising in the field of earth sciences and technology Indian School of Mines conducts three B Tech programmes (in Min Engg, Min Machinery, and Pet Engg), two M Sc Tech Programmes (in App Geology and App Geophysics), 12 other (industry-oriented) postgraduate programmes in Mining Geophysics/Mineral Exploration Petroleum Exploration/Engg Geology/Drilling Engg/Mining & Min Planning/Opencast Mining/Pet Prod Engg/Mining Machinery/Mineral Engg/Fuel Engg/Industrial Engg & Management. Three M. Phil programmes, in App Geology, App Geophysics and App Mathematics, are also run.

The School has an ambitious Continuing Education / Executive Development Programme (covering about 30 courses per year), and also a scheme of institutional consultancy.

III. Detailed information for candidates and prescribed application form are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004, on sending a self-addressed envelope of the size 30 cm × 12 cm affixed with postal stamps of the value of Rs 3.45 paise. Applications in the prescribed application form, complete in all respects, should reach the undersigned on or before **30th June, 1980.**

IV. Candidates who have already applied in response to earlier advertisement within the past 12 months, need not apply again.

S.P. VERMA
REGISTRAR

O/ISM/80

UNIVERSITY
NEWS

Vol. XVIII JUNE 15
No. 12 1980

A Fortnightly Chronicle of Higher Education

Price 80 Paise

IN THIS ISSUE

Sixth Plan : Priorities in Educational Development 326

Campus News

Peaceful and disciplined examinations held at Jabalpur 329
New campus for Calcutta Varsity 329
Survey of university hostels 330
New curriculum for Biology 331
Bicentenary of Indian Press 331
Card and code system for examiners 332
IAS advisers for Bihar VCs 332
SNIPES lays stress on physical conditions 333
AICS approval for new sports policy 334
UGC history panel stresses emphasis on research 335
Pondicherry law college steps up publication programmes 336
Theses of the Month 337
Additions to AIU Library 341
Classified Advertisements 342

Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

Editor : ANJNI KUMAR

Role of Science & Technical Education in National Development

B. Ramachandra Rao*

In a rapidly changing environment, the concept of education has undergone a dramatic change. Logically it has acquired a new dimension in order to meet the emerging and foreseeable needs of society. Its goals, objectives and functions are no longer viewed merely in terms of conservation, transmission and dissemination of knowledge. What we need today are the preparation of functional skills and inculcation of scientific temper which have acquired a new significance in the educational systems of both the developed and developing societies.

No wonder, education in our times has played a crucial role in achieving a spectacular material transformation in the human and social environment. There is enough evidence, backed by empirical researches and general studies, to show that education has been a crucial factor in rapidly increasing the GNP of the developed societies during the last few centuries. This rapid increase in the material advancement of these societies was primarily achieved by the application of science and technical education to agriculture and industry, say, for example, Germany during the last three decades of the nineteenth century and the USSR during the thirtees and forties of the twentieth century registered a tremendous growth in their economy through the process of extending the frontiers of scientific knowledge as well as improving and adapting the existing knowledge to meet the demands of their national goals.

It is against this background that we have to analyse the crucial role of education in eradicating our poverty, illiteracy, ignorance and improving the impoverished rural environment and the quality of life of our masses who have suffered socio-economic exploitation and humiliation for a number of centuries. Indeed, this is a challenging task which would call for the exploitation of our material and manpower resources to the fullest extent. It is the human being who is the cause and consequence of underdevelopment, and the subject and the object of development. It is, therefore, necessary to identify an appropriate approach to education in order to initiate the right kind of developmental activities utilising our human resources.

The system of education which the country inherited at the time of Independence was found to be incapable of fulfilling the task of developing human resources for the modernisation of our economy. True, attempts have been made from time to time by the policy-makers to reorient the educational system to meet the needs and the requirements of the growing economy. Most of the recommendations made by the various educational committees

---

Vice-Chairman, UGC, New Delhi.

and commissions in regard to the restructuring of educational systems, have either been implemented or still in the process of being implemented. As a result of new experiments and innovations, we have achieved some degree of success but much remains to be done. The time has, perhaps, come to review the progress of the new educational schemes in order to identify their success or failure. Perhaps, it is this thing that calls for a new approach to the problem.

Immediately after the attainment of Independence, the Government set up the University Education Commission under the Chairmanship of Dr S. Radhakrishnan to report on Indian Universities and suggest improvements that may be desirable to suit present and future requirements of the country. *The University Education Report 1948-49* recommended that "*for a fuller realisation of the democratic principles of justice and freedom for all, we need growth in science and technology.*" Dr D.S. Kothari in the Education Commission Report (1964-66), stated that "*in a science-based world, education and research are crucial to the entire developmental process of a country, its welfare, progress and security.*"

Pandit Nehru, the first Prime Minister of India, was firmly convinced about the remarkable power of Science and Technology towards the creation of a new social order. The resolution on National Science Policy was passed under his leadership which gave a new direction to the expansion of science and technology in our country. This resolution states in categorical terms that it is only through the application of science that the Nation could fight against the regressive heritage of poverty, malnutrition, an underdeveloped infrastructure of communication, agriculture, industry, education and energy. Who indeed could afford to ignore science today? At every time, we have to seek its aid. *The future belongs to science and to those who befriend science.*

Perhaps, it was in pursuance of the recommendations of the *University Education Commission Report* (1948-49) and the *Education Commission Report* (1964-66) that science and technical education witnessed an appreciable growth in the country at all levels and in all sectors. At the time of Independence, the country had 17 universities and 626 colleges. The total enrolment was 2,37,546 students in 1947-48. Now we have about 25,15,608 students in 108 universities, 10 institutions deemed to be universities, and 4 610 colleges. India has a large number of scientific and technical agencies which have established a chain of national laboratories for carrying out a wide range of research in diversified areas of development. The enrolment in engineering, medicine, agriculture and veterinary sciences has also registered an appreciable growth. The five institutes of technologies have been established on the pattern of similar institutes of technology abroad and also in collaboration with four countries in the world: Britain, Germany, USSR and USA. In 1977-78, the number of colleges of modern medicine stood at [illegible]. Catering to the recognition of the increasing importance of agricultural technology in green revolution, graduate and postgraduate courses and research programmes in agricultural sciences have expanded enormously. The agricultural universities have also undertaken the responsibility for developing comprehensive programmes, new farming methods, proper rotation of crops, better tools and use of chemical fertilisers. In 1977-78, we had 21 agricultural universities offering undergraduate, postgraduate courses in different areas of agricultural sciences.

Despite physical and financial constraints on our economy, the Government made considerable investment in Science and Technological education. A good amount of money was set apart for the development of research institutions. The annual expenditure on education is 2,500 crores of rupees which is only next to that of defence budget.

What has been said in the preceding paragraphs, however, would not reveal the crisis which we are facing in the development of higher education during the last two decades. The frightening feature of the present day educational scene is the explosive expansion of enrolment of students in our colleges and universities, a trend which has magnified the weaknesses that had crept into the system earlier without anyone taking note of them. Part of this uncontrolled expansion was based on the misconception that the economic growth of a developing country like ours can be achieved by producing more highly educated graduates and post-graduates, particularly in the fields of science, engineering, agriculture and medicine and that too on the Western models.

Further, it was an article of faith with our planners that investment in higher education in select areas will be directly translated into economic growth, a belief which has been shown to be totally fallacious. In fact even in the case of developed countries, it is known that once the country reaches the threshold value for scientific and technical personnel, the effect of any further increase in manpower on economic growth is marginal. It is only recently that our planners and policy-makers realised that this expansion based on the earlier assumption of the planners has led to a lop-sided development resulting in sectoral, social and regional imbalances which do not augur well for the immediate future of our country.

Another major implication of this expansion, which has recently become a source of serious concern, is that the benefits accruing from higher education were taken away by the top 30 per cent income-group while 70 per cent of our people have been deprived of their rightful share in them. Contrary to the expectations of social justice, the gap between the rich and the poor has further widened. It is no wonder that the educational orthodoxy, from the fifties onwards, which relied on the assumption that educational expansion will bring about an integrated development and simultaneously bridge the gap between the rich and the poor, has been disappointing.

While the educational system expanded in an uncontrolled and undesirable manner, educational planners, demographers and social scientists continued to be fascinated by the foreign models without being the least aware of the deep malady that had already crept into our educational system. Further, while they were pre-occupied with the endless refinements of statistical series concerning enrolment projections, they failed to correlate the system with the overall national policies and programmes. This failure is quiite apparent when we look at the documents of the Planning Commission. The First, Second and Third Five Year Plan documents had each a chapter on education, but sadly nothing has been said in them on the crucial relationship between education and manpower.

Before examining the implications of manpower planning, let me cite a few examples of how our projections of enrolment in higher education have gone wrong. It is interesting to note that the Education Commission recommended that the expansion of facilities in higher education should be planned broadly on the basis of general trends regarding manpower needs and employment opportunities. The Commission emphasised the need for a drastic reduction in the enrolment both at the undergraduate and postgraduate levels to match the output from educational institutions and the requirements of our society. The Commission further added that at this level of enrolment an economy like ours could neither provide the funds to expand higher education at this rate, nor create the capacity to find suitable employment for the millions of graduates who come out of the educational institutions. It recommended that the enrolment targets at undergraduate level be reduced from 9 per cent to 5.3 per cent for general science courses, and from 10.5 per cent to 7.9 per cent in professional courses. This thinking was based on the assumption that the national economy would register a definite growth rate of 6.6 per cent from 1961-70 and 7 per cent in 1971-86. The actual growth rate, however, turned out to be 4.5 per cent per annum from 1960-69! It is obvious that the stock of educated manpower has tended to increase at a rate faster than the growth of national income which posed problems of the absorption of scientific manpower.

It is unfortunate to note that the intake of students in engineering, agriculture and medical sciences increased substantially resulting in massive unemployment and wastage of public funds. The consequential dissatisfaction among highly skilled personnel led to brain-drain and wastage of manpower and material resources of the country. It is true that the tools and the techniques of manpower forecasting are still primitive and there may be many variations and errors in the process of forecasting. Yet, developing countries like India cannot afford to ignore manpower forecasts especially in the areas of science and technology which involve tremendous financial inputs which come from the national budget.

One suggestion, to offset this haphazard and unplanned proliferation, is to improve the quality of science and technical education. The classes are overcrowded and laboratory facilities are inadequate to cope up with the large numbers. The contact between the teacher and the student has become marginal. All these factors led to an impairment of the quality of technical education during the last two decades, particularly in the institutions under the control of the State Governments. Massive effort, therefore, is necessary to improve the quality of education by improving our impoverished facilities, modernising the laboratories, and adapting new techniques of teaching in the class-rooms. It was during the early sixties that the Indian Institutes of Technology were established and massive funding was provided to train highly competent scientific and technical manpower to meet the growing demands of industry, government laboratories and universities. Barring these prestigious institutes of technologies and a few Regional Engineering Colleges and university departments, the rest of the private and government engineering colleges are in a deplorable state. It is time that substantial resources are made available to rectify this gross imbalance in the funding of major institutes like the I.I.Ts and the rest of the Engineering Colleges. It is heartening to note that the Planning Commission on the basis of the recommendations of NCST has made an additional allocation of 25 crores of Rupees to the UGC for qualitative improvement in science education.

The decline in quality is closely linked with the curricula which were outmoded and unwieldy. It is time that our scientists and educationists tailor the courses to suit the rapidly changing requirements of our industries and research laboratories. There is an urgent need to introduce inter-disciplinary courses, such as environmental sciences, marine sciences, energy etc., which have assumed special significance in recent times. In particular, courses in Engineering and Technology should be designed to suit the needs and priorities of our national developmental activties. This is the only way to avoid unemployment and underemployment of our scientists and engineers.

Not only were the curricula outmoded but it had a built-in weakness which we have realised today. The existing curricula were tailored to suit urban areas of fully developed societies. Even in the urban sector of our economy, the undergraduates and postgraduates in Science, Engineering and Agriculture are experiencing alienation and frustration due to lack of job opportunities. They do not have the necessary self-confidence, desire and commitment to their rural brethren to work for the transformation of rural India. In particular, it is said that hardly 10 per cent of agricultural graduates seek opportunities to work in rural areas particularly on farming and the several other departments of agriculture. Even those agricultural scientists who have come from rural environment do not like to go back to rural India for professional and technical work. It appears that we have not made our rural environment an attractive place to live to attract scientists, agriculturists and technologists. Even when job opportunities are there in rural sector, our scientists and engineers are reluctant to take up work in rural areas as a challenging task for the transformation of our rural scene. They prefer to sit idle in urban environment or take up jobs in the lower income-level which do not correspond to the training which they had acquired. The only way to reverse the process of rural to urban migration is to improve the physical facilities and offer incentives to attract scientists and engineers to take up the challenging problems involving rural reconstruction.

In the earlier years after Independence, no effort was made by our planners to consciously encourage interaction between university departments catering to science and technology and industries with a view to involve them in our developmental activities. As a consequence, our courses are totally devoid of practical live situations relevant to our country. The teachers in the institutions are also divorced from the industries in their neighbourhood. Even our graduates and postgraduates are totally unaware of the techniques of production and management in industry. No wonder, it is because of our failure to build a nexus between industry and our technical and professional institutions, we are paying a heavy price. It is rather unfortunate that our industries, especially in the private sector, do not find our science and engineering graduates fit to take the jobs demanded by them. Most of the industrial complexes are unwilling to establish any colloboration with our engineering and technology departments either in training, research work or consultancy. Of late, the tax concessions given to the universities have enabled them to start building their own research and development laboratories. Is it not possible to evolve a strategy to avoid multiplication and proliferation of R and D laboratories in the country? Can't we evolve a strategy of major industries establishing their own research and development laboratories in the university campuses so that the material resources developed in these R and D units and the untapped potential of research staff of the university could be put to their mutual advantage? In this connection, a reference is made to the experiment of the Birla Institute of Technology, Pilani, which has started a comprehensive programme under the name of Practice Schools. This is a highly successful experiment in university-industry collaboration which to a large extent has yielded meaningful results not only in enhancing the practical skills and competence of their graduates but also in gaining firsthand knowledge of the pressing problems of some specialised industries. In this manner, they have not only been able to increase their job potential but also earn scholarships for their maintenance in these industries for nearly half of an academic year. Systematic contact programmes with the industries enabled the BITS to interact with a large number of industries, both in the public and private sectors to carry out the Practice School programme successfully.

Another major problem which is disturbing our planners is that we have not cared to build up medium or middle level manpower which is needed in a large measure to make a success of our developmental strategy. Unless the high level trained manpower in this country is supported fully by the medium-level trained manpower, the pace of our industrial production and technical advancement will slow down. In recent times, we have noticed the alarming trend of shortage of essential middle-level technicians such as computer programmers, instrument scientists, mechanics, plumbers, electricians etc. We have a large number of industrial training institutes and polytechnics but the products of these institutions, are neither professionally competent enough, nor adequately equipped to undertake such tasks. In order to fill this gap, the Education Commission recommended that 30 per cent of our students at the plus 2 stage should be trained in vocational courses but the attempts made so far have been half-hearted and have not yielded any meaningful results. It has generated a number of conflicts which have become a source of serious concern for the educational practitioners and the policy-makers. The major conflict is between the general versus vocational methods of education. An impression has been created in the minds of students offering vocational courses that they are inferior while the job opportunities for them would be meagre.

Apart from this, there are other reasons for the failure of vocational courses at plus 2 level. The higher secondary schools are unable to obtain adequate financial resources for providing the minimum physical facilities and the necessary infrastructure needed for running the select vocational courses. It has been possible to start only certain vocational courses such as stenography, secretarial practice etc., which do not involve large financial inputs. Urban students are not interested in joining vocational courses involving manual skills; for, these are regarded as socially inferior while promising fewer opportunities for highly paid jobs. In the case of schools in the semi-urban and rural sectors neither competent teachers nor the physical facilities are available for starting vocational courses. Besides, there is the psychological feeling that rural children are being provided an inferior type of education which will deprive them of opportunities for higher education, and also tie them down to the impoverished rural environment for ever. Thus, the vocational programmes have not made any dent on the high school system in the country in both the urban and rural sectors.

It is unfortunate that no detailed study has been made to investigate what little impact the vocational study at plus 2 level has made on the educational system. From the little information that is available, it is obvious that this experiment has failed to generate any meaningful results either from the viewpoint of improving manual skills and productive capacity of the student, or from that of the economic development of our country.

The vocational education would have been a success, if Gandhiji's ideal of introducing work experience as a compulsory part of school education is implemented. Gandhiji believed that students should learn more about nature and the world around them by taking to training in crafts and skill-oriented jobs. There is obviously a serious conflict between the general versus vocational systems of education.

Perhaps, it is possible to integrate work-experience with general education. Here is a pertinent excerpt from Gandhiji. "*Literacy, i.e., learning of books, acquisition of intellectual knowledge and useful manual work in various crafts are not different though they may seem so. Efforts to separate them and break the link that binds them together, result in the misuse of knowledge. . . The bond between the two is indissoluble.*"

True, the University Grants Commission, which is concerned with higher education, has initiated a programme of introducing restructured vocationally-oriented courses at the undergraduate level to provide better employment opportunities for science graduates, but this too has not made any contribution in solving the problems that we are facing today. As per this scheme, a college can introduce one or more application-oriented courses in place of the present academic subjects so that there would be better opportunities for employment as well as self-employment. Several examples of such courses have been suggested. Courses such as Electronics, Instrumentation, Radio and Television, Workshop practice, Fish-farming, Agricultural chemicals, Horticulture, Dairy development, Home management, Public health, Soil science etc., can be introduced as one of the three optional subjects in the B.Sc. courses. These courses must be so chosen so that they cater to the local environment and its requirements. In this manner, the Commission hoped that the serious shortage of middle-level technicians and skilled personnel could be met. The large scale unemployment among science graduates in the country has also been the motive force in suggesting this scheme for increasing opportunities for employment in the private and public sectors. However, it is unfortunate that this scheme has not been successful for various reasons. First, the quantum of training in applied courses would put them at a serious disadvantage compared to engineering graduates. Secondly, the opportunities for postgraduate studies would be limited because of the dilution of the conventional pure science subjects with applied subjects. However, the Commission has also suggested one year post B.Sc. diploma courses which would be able to train those science graduates who are unable to get admission into Master's Courses to take up intensive vocational training in one-year-diploma courses. The training would be extensive as well as intensive in any one of the vocations where there is a serious shortage of manpower. To substantiate, since the country is facing a serious shortage of personnel in computer science, instrumentation, electronics environmental engineering etc., one year diploma courses in the subjects could be started in certain select university departments which have the facilities and the necessary expertise. It will go a long way in providing the urgently needed manpower in these areas.

There are also certain highly specialised areas at the Master's and post M.Sc. levels where there is a definite shortage of personnel such as Space Technology, Microwave Engineering, Computer Sciences, (Hardware), *Dyestuff* Chemistry and Technology, Polymer Science for which there is a good deal of demand in the country particularly in the major industries and industrial R and D laboratories. The University Grants Commission has been providing support and encouragement for starting some of the above courses in select university departments. Expressing concern at the massive unemployment at the tertiary level among science and engineering graduates, the Planning Commission has recently allocated a sum of 20 crores of rupees to the UGC to initiate several new programmes aimed at improving the job opportunities of science and engineering students.

The foregoing analysis leads to the logical conclusion that what is lacking in the country is not a dearth of ideas and constructive innovations but the will to change, the resources to invest, and the necessary authority and infrastructure to translate these ideas into tangible realities. There is an imperative need for recasting our educational priorities:

(i) by evolving new curricula and content of courses relevant to environmental needs of the country;

(ii) by augmenting physical facilities to strengthen schools, colleges and universities;

(iii) by providing ample opportunities to teachers to improve their functional ability and competence;

(iv) by identifying talented students and encouraging them to actualise their talents to the full extent; and

(v) above all, by encouraging students from backward areas and weaker sections of our society to avail of the new educational opportunities.

[*Excerpts from the convocation address delivered at the University of Poona*].

Sixth Plan : Priorities in Educational Development

J. L. Azad*

The Sixth Plan document has been published by the Planning Commission amidst wide-spread speculation that we have re-entered an era of plan holiday. The fear is, however, unfounded and betrays lack of understanding of the process of planning in India. The system of planning that we have evolved is sufficiently flexible and can withstand stresses and strains that overtake Indian economy from time to time. In the final analysis, the operational plan is the annual plan, which takes into account the various changes occurring in the economy from time to time. The five year plans at best provide the broad policy framework which has to be translated into action through the annual plans. Considered in this context, it can be argued that, unless some cataclysmic changes occur in our economic and social situation, the broad dimensions of the plan, as given in the draft Sixth Plan document will remain unaltered. There could, however, be some marginal changes in the programmes under various sectors. This presumption underlies the discussion, that follows, of educational priorities in the Sixth Plan.

It has become almost customary for the Planning Commission to initiate discussion about the priorities and programmes of education with a few commendatory statements about the potentiality of education for accelerating social and economic development. The Sixth Plan follows this procedure and describes education as a powerful instrument of socio-economic development, which must be so structured as to subserve this objective and fulfil the aspirations of the masses. It has also suggested that the policies in the field of education need to be so operationalised as to become an integral component of national development. The Plan document admits that much of the benefits from the social services infrastructure have accrued largely to the relatively affluent. Many segments of the population like scheduled castes and scheduled tribes have not shared fully in the benefits of growth and, therefore, one of the objectives of the Sixth Plan is to provide some of the basic needs of people in these income groups, like clean drinking water, elementary education, health care, adult literacy, rural roads, etc.

Approach and policies

It has been indicated that changes in the educational policies should be brought about to make the educational system relevant to our objectives of (a) removal of poverty, (b) removal of unemployment, and (c) improvement of skills. With these ends in view, elementary education and adult literacy have been included as an essential part of the Revised Minimum Needs Programme.

The policies of educational development are proposed to be formulated with a view to achieving the following objectives:

(1) The educational system has to respond to socio-economic realities and promote evolution of a society without large inequalities, poverty and unemployment.

(2) Greater priority to universalising elementary education for the age group 6-14 through a joint strategy of economic development and educational expansion.

(3) Adult education will receive priority with emphasis on the eradication of adult illiteracy in the age group 15-35.

(4) Regulation of enrolments at the secondary and higher education stages.

We shall discuss below these objectives in the context of policy statements made and the targets laid down for different sectors of education.

Elementary education

As already stated, elementary education has been given priority in the Sixth Plan and that 45% of the total outlay of Rs 1986 crores provided in the Sixth Plan has been earmarked for this sector. This compares very favourably with the expenditure in the previous plans, with the exception of the First Plan. With this massive investment in elementary education, it is proposed to enrol an additional 320 lakh children in the age group 6-14 under the system of formal and non-formal education. If these targets are achieved, the coverage of the age group to the relevant population will rise from 67% in 1977-78 to 87% in 1982-83.

While it would be difficult to deny the importance of accelerating facilities for education for the children in the age group 6-14, it has to be recognised that the target laid down by the Planning Commission is rather ambitious. The position would become clear when we consider the achievements in the earlier plans. In the Fourth Plan, the number of additional children brought to educational institutions, in the age group 6-14, was 123 lakhs. In the four years of the Fifth Plan, the number of additional children was 97 lakhs—67 lakhs in classes I-V and 30 lakhs in classes VI-VIII. Thus, the total number of additional children brought to educational institutions in 9 years preceding the Sixth Plan was 220 lakhs. The target in the Sixth Plan is almost one and a half times the combined achievement of the previous two plans period. This would be difficult to realise unless some special efforts are made to attract this age group to the educational institutions. It may also be stated that although, according to the survey made by the

---

**Officer on Special Duty, ICSSR, New Delhi.*

NCERT, a large bulk of villages had schooling facilities within walking distance as defined by them, it would be difficult for the non-attending children to be attracted to educational institutions because of, among other things, the economic reasons which prevent them from availing themselves of these facilities.

The problem of girls education is also somewhat intractable. While the coverage of the boys of the relevant age group in 1977-78 was 82%, the girls accounted for only 51% making a total coverage of 67%. This is more so in the case of 11-14 age group, where the coverage of girls students was only 25%. To raise this percentage coverage to 77 by the end of Sixth Plan would be a formidable task for which special measures would be required.

The uneven distribution of educational facilities in the states and within the states is also another factor to be reckoned with. The Sixth Plan document has listed nine states, which are educationally backward. Most of these states are also economically backward. Since elementary education falls within the constitutional responsibilities of state governments, it would be difficult for these states to provide the requisite resources for the expansion of elementary education in their areas notwithstanding its being a part of the national programme of minimum needs.

The strategy proposed for attracting larger population of the children at the elementary stage is twofold:

(i) the adoption of multiple entry system and special/condensed courses of non-formal education for those grown up children in the age group 9-14, who have never been to school or dropped out at an early age.

(ii) a system of part-time informal continuation education for children who entered the primary school but dropped out later.

Without questioning the policy framework laid down by the Planning Commission for achieving the targets of elementary education, it would be prudent to hasten slowly. The schemes of non-formal continuation education and multiple entry system are not new to the educational system in India. The experience in the past has revealed that after a certain stage, the effectiveness of these strategies is lessened and, therefore, it is necessary to tread cautiously in these areas.

It has been stated that an attempt will be made to reduce imbalances of regional development and special efforts will be made to identify backward areas and promote expansion of elementary education in these areas. This is a very desirable objective. The success of this programme will, however, depend on the capability of the administration at the block and district levels to look to this aspect and to take necessary corrective measures to achieve these aims. As it is, the educational administration at the district and block levels is so much engrossed with routine administrative duties that they find very little time to attend to developmental activities. Besides strengthening the administrative cadres, both quantitatively and qualitatively, it would also necessitate proper training of the officers at these levels.

The problem of wastage and stagnation at the elementary stage is also to be reckoned with. Due to various socio-economic reasons, the rate of drop-outs in classes I-V is considerable. There will, therefore, be need to provide sufficient incentives for attracting and retaining children at the elementary stage.

Adult education

A colossal effort is proposed to be made to eradicate adult illiteracy among the masses of India. Under the National Adult Education Programme (NAEP), it is proposed to educate 100 million adults in the age-group 15-35 in a period of six years beginning from 1977-78. The target for the Sixth Plan is to educate 65 million adults belonging to the age group 15-35. It has been rightly suggested that the success of the programme will depend upon an appropriate social environment, sincere motivation of adults, proper selection and training of workers, preparation of good learning materials, adoption of dynamic methods of learning, adequate supervision and guidance and constant monitoring and evaluation. The literacy programme is to be of a functional character so that it is helpful in the day-to-day activities of the learners as also to create awareness among them about the social problems.

While we do not propose to dispute the necessity of having a programme of this magnitude for removing illiteracy among the Indian masses, it is necessary that the problems that its implementation would cause should be identified.

The foremost problem facing the success of this programme is that of motivation. Unless the adult education programme helps the learner to be better equipped to solve his professional and other problems, it would be naive to expect him to attend adult literacy centres and to keep himself engaged in educational activities after he has completed the course. It is necessary that a feeling should be generated among the adult illiterates that it would be in their own interest to participate in the adult education programmes.

For the organisation of this programme, it would be necessary to select a body of dedicated workers whose approach is not purely mercenary but who have ideological affiliation with this programme. The success of this programme will depend upon the extent to which this body of dedicated workers can be identified and put on the job.

The question of follow-up is also very crucial to the success of this scheme. Unless there is a regular follow-up and feed-back, the adult learners will very likely relapse into illiteracy, defeating the very purpose of this gigantic venture.

Secondary education

The main thrust in secondary education has been appropriately laid on the qualitative improvement, vocationalisation and regulated expansion.

The additional enrolment proposed for the Sixth Plan is about 30 lakhs which is of the same order as envisaged in the 5th Plan—1974-79. This target may be somewhat unrealistic because of the increasing pressure from the elementary schools, for which a massive programme of expansion has been envisaged.

The emphasis on vocationalisation in order to make secondary education terminal in character is a step in the right direction. It has also been envisaged that secondary education should be employment-oriented and directly useful to the students. For this purpose, vocational education facilities in various institutions like ITIs, polytechnics, agricultural polytechnics, para-medical schools and other vocational training institutions are to be utilised and diversified before new training programmes are established.

Higher education

The Plan document rightly states that there has been a rapid but unplanned expansion of general higher education during the earlier plans. It has also been noted that while the enrolment in arts and commerce courses has been expanding rapidly, the enrolment in science courses has been falling in proportionate terms. In 1970-71, the enrolment in science courses in universities and colleges excluding intermediate and pre-university courses was 26% of the total enrolment. It was reduced to 21% in 1973-74 and 18% in 1977-78. This is a phenomenon, which should engage the attention of educational planners. The Plan document, however, does not appear to be much concerned about this diminishing trend.

Another important policy statement relates to the proliferation of institutions. It has been stated that no new university should be set up; colleges should be established with great restraint and only after ensuring adequate resources in terms of teachers, finance and materials. It has been stated that access to full time education should be regulated and linked to talent and aptitudes. Admissions to institutions of higher learning at the first degree and postgraduate levels should be selective and based on merit, but with adequate reservation of seats for the weaker sections.

One has only to read the relevant portions in the previous plans to find similar statements without achieving tangible results. The colleges and universities have been coming up without much restraint even in spite of the discriminatory financial policies adopted by the state governments. It has also been seen that the sufferers of the policy of regulating admissions have been generally the weaker sections of the society. It is, therefore, necessary that an integrated plan of development of higher education involving regulation of admissions to formal institutions and expansion of informal education facilities on an adequate scale should be formulated. It should also be ensured that adequate incentives are given to the weaker sections of the society so that they are not denied educational facilities because of their economic backwardness.

It has been rightly pointed out that the present trend in the UGC funding in favour of central universities and those universities where centres of advanced studies have been created has to change. Besides, creating wide disparities in the quality and standards of different universities, the discriminatory financial policies adopted by the UGC have led to lop-sided growth of higher education. The proposals about the restructuring of the UGC in order to make it a more effective instrument of the Central Government for the qualitative improvement of higher education is also a step in the right direction.

Technical education

No new colleges and polytechnics are proposed under the assumption that the present facilities will be adequate to fulfil the manpower requirements of technical personnel in the Sixth Plan. It is, however, necessary that the manpower needs should be assessed on a long term basis and the expansion of technical education planned accordingly because of the long gestation period of technical education.

Financial outlays

Finally, we come to the plan allocations for educational development for the period of 1978-83. The total provisions made for education sector is Rs 1986 crores, which compares favourably with Rs 1285 crores allocated in the Fifth Plan. Out of the provision of Rs 1986 crores, the bulk of the outlay i.e. Rs 1486 crores has been kept in the state sector. This is a desirable step. The only precaution that needs to be taken is that the states, harassed by demands from other sectors, like irrigation and power, agriculture and industry, etc. do not divert the amounts from education to those sectors. The inclusion of elementary and adult education as a part of the RMNP is expected to curb this tendency.

A study of the inter-sectoral priorities indicates larger emphasis being given to elementary and adult education, which account for almost 60% of the total outlay. This has been at the cost of secondary and university education, which have been allotted 27% of the total outlay in the Sixth Plan against 42% in the Fifth Plan and 43% in the Fourth Plan. It has, however, to be ensured that as the plan proceeds reappropriations do not take place in favour of secondary and university education. This has been the tendency during the previous plans which needs to be curbed.

Raising resources

The Plan document makes an important proposal for raising financial resources for education sector. They relate to the raising of fees at the secondary and post-secondary stages so that the educational fees bears some relationship to educational expenditure. At the secondary stage, it has also been suggested that trend towards abolition of fees needs to be halted.

The question of raising fees has been discussed at various forums. It is admitted that the present fee structure bears no relationship to the accelerating cost of education. The socio-economic and administrative implications of raising fees have, how-

(Continued on page 340)

CAMPUS NEWS

Peaceful and disciplined examinations held at Jabalpur

Jabalpur University was able to conduct its examinations for 1980 with considerable amount of success. The civil authorities and the police authorities extended their cooperation to the university not only to conduct the examinations but also to ensure a clean examination. The local press was equally helpful. The District Magistrate and the Senior Superintendent of Police were always available and visited the centres with their staff.

Nearly a year ago the commencing date of all 1980 undergraduate examinations were announced and the time table of studies together with the names of the teachers who will deliver lectures on each day were obtained by the Dean, College Development Council of the university. The detailed time table for each examinations including postgraduate examinations were issued much in advance. The Dean, College Development Council visited the colleges frequently to ensure progress of studies and the extent of coverage of courses.

The university authorities took firm decision that no repeat examination on boycotted papers from which there would be walk out would be held. These were given adequate publicity in the newspapers and the college authorities were also informed. The university authorities arranged separate examination centres at Katni and Sihora as in addition to Jabalpur for those who were appearing privately and were not allowed to sit with regular students. The most noticeable change in the present examination arrangements was to hold the combined law examinations of 700 law students from two private colleges and the law students of the university teaching department in the university itself in spite of many oppositions and odds. This step was taken because the law examinations in the past had become 'farce' and copy was also used to be written from outside.

The undergraduate examinations of the university commenced early in March. About 25,000 students appeared ar the various university examinations. There was no walkout or boycott or tearing of papers. The Vice-Chancellor, Shri Kanti Chaudhari, with a team of senior professors and other members of the teaching staff inspected all the colleges in both the morning and evening shifts to prevent copying. All teachers of the UTD were present at the time of law examinations. In all 1843 cases of unfair means were detected and booked. These cases were detected mainly through body search in which the college authorities themselves also participated. The university is now in a position to certify that it has been a cleanest ever examination. The law examination could be regarded as the cleanest of all law examinations held in northern and eastern Indian universities.

One of the noticeable features for these examinations has been that there has been no students demonstration during the year under review because of the strong action taken by the university. No person other than the examinees were found near the examination centre.

Present state of things is the culmination of the dangerous socio-political trends of the past few years. Just a few non-students, playing in the hands of an evil, coterie have been attempting to disrupt, to thwart the progress of education. The reform in higher education and reform in the examination system is called for but such a complex national problem cannot be solved by one university alone. As long as the present examination system lasts, prevalent chaos in the examination system cannot be allowed to be turned into anarchy. It has been found that bold action pays dividend as it paid this year. A growing 15 years old malady had been halted this year by combined efforts of the university teaching community, civil authorities and a very large number of good students and general public. It is therefore not a matter which is beyond repair. Inspiration always came from the Chancellor. His support to the university especially in the conduct of examinations has been most praiseworthy.

A new campus for Calcutta Varsity

Calcutta University for about six decades of its existence, from 1857 to 1904 was nothing more than an examination-taking and degree-giving body. Towards the end of that period, however intense nationalist pressure succeeded in engineering even among a section of the alien rulers an inclination to develop the university in the true sense of the term where postgraduate teaching and research would be carried out and a local intellectual elite could be created. This will be apparent from the following excerpts from the convocation address delivered in 1904 by the Chancellor Lord Curzon, himself a scholar of great reputation and a Fellow of the All Soul's College at Oxford:

> "...the ideal University that we are contemplating should be centrally situated; it should be amply and even nobly housed; it should be well equipped, and it should be handsomely endowed. In these conditions it would soon create an atmosphere

of intellectual refinement and culture; a moral quality and influence would spring within it, and tradition of reverence would grow up like creepers round its walls".

However, Sir Asutosh Mookerjee during his eventful years of Vice-Chancellorship (1906-14 & 1921-23) found, to his utter dismay, that the sentiments of Lord Curzon were not redeemed by the Government. But Sir Asutosh and a galaxy of eminent nationalists like Acharyya Prafulla Chandra Ray, Sir Nilratan Sircar, Maharaja of Darbhanga, Sir Taraknath Palit and Sir Rashbehari Ghose, built up the Post-Graduate Departments of the University of Calcutta as we see today. In these developmental activities, contributions from the alien Governments both at the Centre and at the State levels were minimum. And it is a historical truth that Sir Asutosh refused Government help but did not surrender the autonomy of the University. So he had to depend almost exclusively on the generosity of the Bengalee and Indian Zamindars and millionaires. As a result, the University grew up in a haphazard way, all over the city of Calcutta, wherever and whenever little bits of land were available. The University of Calcutta is now spread over a total of 20 or so acres of land in seven different locations and over 20 different sites.

With the advent of Independence, the whole perspective of the Government-University relationship underwent a sea-change and the step-motherly attitude of the Government to the University began to change for the better, especially during the life time of Dr. Bidhan Chandra Roy. However, the age-old mutual suspicion between the Government and the University lingered on. No major effort or thought has till recently been given by the Government towards consolidating the University in a few major campuses so that it can discharge its academic responsibilities as the modern age demands. It is indeed, a matter of rejoicings that the present State Government has finally decided to hand over, in stages, a vast area of about 100 acres, at present occupied by the Presidency and the Alipore Jails, in one of the best localities in the heart of Calcutta to the Calcutta University in exchange of some of its out-lying properties. The site in the vicinity of the National Library, the Zoological Gardens, the University College of Medicine, the Seth Suklal Karnani Memorial Hospital, the Rabindra Sadan, and the Birla Planetarium. It is also well-connected by public transport and will be near two major stations of Underground Tube Railway. This new University campus at Alipore will accommodate some of our major departments like Education, Economics, Political Science, Sociology, Literature and Languages, and some of the research institutes and centres like South East Asian Studies Centre, Electron Microscope Centre, Guha Institute of Biochemistry, Institute of Molecular Biology, etc. This new campus will have adequate provisions for student and staff amenities like, Campus Library, Auditorium Lecture Theatre, Exhibition Hall, Canteen and Sports Complex.

Survey of university hostels

Tata Institute of Social Sciences, Bombay, at the instance of the University Grants Commission following a suggestion of a Vice-Chancellors conference in 1975 that hostel facilities were far from aduquate, has conducted a survey of living conditions of students in university and college hostels. The survey has recommended that each room or dormitory could accommodate four to ten students. Provision for separate study halls should also be made. The report however says that this pattern should be applicable only to the undergraduates as it may not be suitable for postgraduate students. The University Grants Commission would be setting up a committee to examine these recommendations.

The survey found that nearly half of the hostels in the country were unable to accommodate all those who are desirous for admission. While the majority of the hostels were adequately maintained, large number were poorly looked after. However, there had been a special efforts after independence to provide hostel facilities for women. In fact, more women's hostels were built after independence than men's.

The survey said the provision of facilities in women's hostels were generally adequate and better than in men's hostels. The cost of living was also lower. While many of the men's hostels were known to be used for nefarious purposes, there were hostel rooms in Calcutta that were handed down from student to student on a 'pugree, basis which may rise with each subsequent occupant.

One of the main findings of the survey that the best provision of hostel facilities were to be found in Punjab, Haryana, Kashmir. Himachal Pradesh, Delhi, Chandigarh and to a lesser extent in U.P.

The worst provisions of facilities, according to the survey, are to be found in Bihar, Orissa, West Bengal, Assam and the North-Eastern States and the Union Territories.

The survey revealed that the hostels in Marathwada were the poorest in terms of facilities. However, charges for students were also very low. But for these hostels, in spite of their sub-standard conditions, many students would not have been able to pursue higher education in this region.

It was found that more than half of the hostels were understaffed. The number of inmates in these hostels exceed 50 for every single warden or senior staff member. In fact, in a few of these, the ratio even exceeded 1:100. The survey recommended that steps would be taken to bring down the ratio to 1:50. It also suggested that workshops should be organised for wardens in areas like budgeting mass management and nutrition.

New Curriculum for Biology

Delivering the convocation address at the Osmania University, Hyderabad, Prof. V. Ramalingaswami, Director-General of the Indian Council of Medical Research, stressed the need to draw a new biology curriculum for schools and colleges, cutting across several disciplines so as to catch up with the 1980s which may well be the decade of biology. Asserting that research in the developing branch of molecular biology ought to be a continuous process he suggested consultations between universities and industry to help develop skills and competence for resolving the country's health problems and speeding up overall development. He said that while the 1960s and 1970s could be considered significant in the application of agricultural technologies in India, the 1980s might well be called the age of primary health care. It was necessary to provide a package of integrated services involving basic health care, protection against communicable diseases and control of family size in the coming decade through the application of recent spectacular development in biological sciences. Referring to the progress in fundamental biology over the past two decades he said that it was now possible to take the human genes apart, analyse them and incorporate them in the bacteria so that the bacteria can make the end products of gene action.

The benefits of discoveries in molecular biology might hold out answers to the genesis of cancer, problems of ageing as also reasons for high blood pressure, heart attacks and strokes. Though recombinant DNA technology was hardly seven years old, it had already been demonstrated that it was possible to reorder genesis material at will. The benefits of genetic engineering were not necessarily confined to medical and health fields. He pointed out and hinted at the possibility of producing vastquantities of useful chemicals cheaply and efficiently. Biotechnology was yet another major attraction which could be used for recycling agricultural and industrial wastes into useful products. Notwithstanding all these benefits of genetic engineering, there were also certain hazards that needed urgent attention. Among the fears expressed about the recombinant DNA technology was the risk involved in releasing potentially dangerous forms of micro-organisms into environment.

Presenting the report, the Vice-Chancellor of the University, Dr. G. Ram Reddy, said that in order to promote research in areas which are of immediate relevance, it had been decided to establish two centres—one for energy studies and another for pollution studies. These would be interdisciplinary in character.

Teaching symposium in pharmaceutical sciences

A national seminar on recent advances in research in Pharmaceutical Sciences and a symposium on teaching of pharmaceutics subjects were held at the Department of Pharmaceutical Sciences, Andhra University, Waltair. The seminar and symposium were inaugurated by the Vice-Chancellor of the University, Shri M.R. Apparow. In his address, the Vice-Chancellor mentioned the research achievements of the department and stressed the need to hold seminars of this kind for dissemination of scientific information and for bringing researchers of various institutions together.

Prof. V. Subba Rao, of the Department of Pharmaceutical Sciences and Principal, College of Science & Technology who presided, observed that there would be a wide gap in the production of drugs and their demand in the years to come. This should be obviated not only by increasing the production of drugs, but also by reducing the dependance on drugs by providing better conditions of health and hygiene.

Bicentenary of Indian Press

The Department of Journalism, Banaras Hindu University, in collaboration with the Indian Journalism Education Association organised the first Indian Journalism Congress in Varanasi to mark the bi-centenary of Indian press. The Congress emphasised the need of close cooperation between the professionals and educationists in the field of mass media.

Mr. Justice A.N. Grover, Chairman of Press Council of India, inaugurated the Congress. In his address he stressed the need to start a national dialogue on the raising of the standard of journalism and ensure the freedom of Press. Referring to the role of Press Council, Justice Grover said that the Council was unique of its kind. It derived its authority from an Act of Parliament though it had no punitive powers. The Council had been designed to function as an impartial arbitrator on issues affecting the free flow of information in general and press freedom in particular. The press is predominantly urban and efforts should be made to reach the rural population where illiteracy and poverty are the main hurdles. Mr. Grover added that after independence, the role of

SRI VENKATESWARA UNIVERSITY
TIRUPATI
Addendum to Advertisement No. EII-2/1980(2), dated 15-5-80

Sl. No. 1 of the Advertisement No. EII-2/1980(2), dated 15-5-1980 be read as follows :

I. Teaching

"1. **State Bank of India Chair S.V.U.P.G. Extension Centre, Kavali/Kurnool**
Professor in 'Rural Banking & Development of Rayalaseema'
. . . One post"

REGISTRAR.

the press could no longer be considered as an adversary of the Government which needed to be disciplined and curbed. The need of the day was the establishment and preservation of freedom of the press which had become vital in a democratic society. In such a society the press was the dominant and major institution of public life of the nation. He also referred to the relations of the press with other organs of the government the legislature, the executive and the judiciary. He said that this was the most sensitive area and the journalists had to dwell with action. The freedom of the press means the freedom of the journalists. They should report the events accurately and most analytically subject to the limitations imposed upon them by the framework of a well-laid policy of the newspaper.

The Congress had a special session on the problems and prospects of language press. Several papers were presented on subjects which included, among others, monopoly press, freedom of the press, training of correspondents, credibility and journalistic freedom, amalgamation of news agencies, re-assessment of the role of mass media and the rural press.

Dr. Hari Narain, Vice-Chancellor of Banarus Hindu University, while welcoming the delegates emphasized that the press had a special obligation towards the people. The press should bring to the light the problems and aspirations of the citizens.

Mr. A.K. Jain of the Nav Bharat Times was the chief guest. He stressed on the various problems of the press. Dr. Nadig Krishnamurti of Mysore University who presided over the Congress opined that the teachers of journalism should be included in the different committees like the Press Council, Press Commission, etc. Prof. A.K. Banerjee of the Journalism Department of BHU outlined the objectives of the Congress and gave the report of the Indian Journalism Education Association.

The seventh annual meeting of the Indian Journalism Education Association was also held during the Congress. It elected Prof. A.K. Banerjee, Head of the Department of Journalism, BHU, as its President and Prof. L.N. Gokhale of Poona University as General Secretary.

The second session of the Congress will be held in Bombay in January 1981 under the auspices of Rajendra Prasad Institute of Communication of Bhartiya Vidya Bhavan.

IAS advisers for Bihar VCs

The Bihar Government has appointed IAS advisers to the Vice-Chancellors of State universities in the state. According to a notification issued by the Personnel Department Mr Deepak Gupta has been appointed adviser to the Vice-Chancellor of Patna University. At Present he is joint secretary in the Health Department.

Besides, Mr V. Jayshankar, Joint Secretary in the Public Works Department, Mr A.K. Upadhyaya, Joint Secretary in the Finance Department, Mr Shankar Prasad, former district magistrate of Katihar, Mr Beck Julius, former district magistrate of East Champaran and Mr P. Seth, Deputy Director of Consolidation, Arrah have been appointed advisers to the Vice-Chancellors of Bihar, Magadh, Bhagalpur, Ranchi and Mithila universities respectively.

The appointment of advisers has been made in view of the deliberation of Vice-Chancellors' conference held on May 10 in Raj Bhavan under the chairmanship of the Chancellor Dr A.R. Kidwai. Dr Kidwai at the conference felt the need to appoint IAS Registrars for all the universities in the state.

It was maintained that the present administrative set-up of the universities could not maintain discipline and law and order on the campus and deal with unauthorised occupation of hostels and teachers' quarters. It needed IAS Registrars to deal with such rowdy elements with an iron hand.

The IAS advisers will now perform the task decided at the conference of Vice-Chancellors.

The Government is also considering to appoint pro Vice-Chancellors soon for all universities.

Card & code system for examiners

According to newspaper reports, the Andhra Pradesh Government has decided to introduce card and code system for the selection and appointment of examiners for evaluation of answer papers of public examinations. This system would come into force from SSC examination held in March 1980. The system envisaged the creation of a master file, the particulars of all qualified teachers in different subjects. The master file had since been built up with particulars of teachers from different managements. The seniority list of teachers subjectwise had been prepared by computer, identity cards and appointment orders were also sent to teachers. Their lists would be updated every year.

The Government had also decided to store question paper packets in the district treasuries, sub-treasuries and at police stations and at centres with police guard. These steps had been taken because of the reported leakage of SSC public examination question papers in recent times. This system required the active cooperation and involvement of the officers of Director of Treasuries and Accounts and Police Department and the Government had been able to implement the system successfully. The Government has exempted the physically handicapped students (blind, deaf and dumb) for VII class common examination and SSC public examination with a view to encouraging them.

IARI transforms Delhi village

Dr H.K. Jain, Director, Indian Agricultural Research Institute, New Delhi, told newsmen at

Holumbi-Kalan village in the Alipur block of the Union Territory of Delhi that India's potential for agricultural production is much greater than that of many western countries and our production technology is one of the best in the world. However only one-third of the production potential is utilised. Dr Jain said that we had millions of small and the marginal farmers with very little resources. He added that IARI's experiment was only a small beginning in the study of intensive farming by the transfer of the modern technology, the scientists were generating. The first task of the scientists was to organise the small farmers into viable groups for the optimum use of resources. After discussions with the farmers a group of 10 harijans owning one acre of land each was formed. A package of practices relating to wheat production was initially adopted four years ago. It has by now spread to more than 30 farmers. The farmers increased their wheat production from 14 maunds per acre to 40 maunds per acre. Some have even produced up to 55 and 60 maunds per acre. Following this remarkable success mady by the small farmers, even the big farmers in the area were adopting the same methods. The farmers had to face problems with the banks because of certain outdated rules governing lending. For example, the bank in the area would advance money to the farmer solely for agricultural purposes. If a farmer wanted credit for buying cattle or any other such requirement he has to go to another bank which sends him back to the bank in his area. On the advice of the IARI scientists, the Harijan farmers replaced bajra and maize with paddy crops with an yield of 40 maunds per acre. In between the wheat and paddy crops they cultivate vegetables. After adoption of the new technology the income of the farmers had increased.

Delhi Executive Council meets

At the last meeting of the Executive Council of Delhi University, many members pointed out malpractices in examination that were growing. The Council accepted members suggestion to set up inspection squads which will make surprise visits at all examination centres. In a bid to improve the south campus and also to decentralise the examination branch the Council decided that all south campus colleges should be looked after by a branch of the examination department. The Council also approved fresh quidelines to punish students who indulge in malpractices.

It was felt that the procedure to penalise the culprit is not without loopholes. It was decided that a committee, including legal experts, should be set up to go into the cases which are doubtful so that innocent students are not punished.

To encourage blind students, the Council decided to give preference to the blind candidates in the appointment of lecturers and also to institute two more fellowships for blind students during M. Phil.

The working of the School of Correspondence was also criticized. The members pointed out the standard was going down. The lectures do not reach students in time.

One of the Principals of the School suggested to lower the percentage from 40 to 33 for new entrants in view of the falling admission rates but this was rejected by the Council. The Council appointed a committee to go into the Delhi University Students Union's demand for direct representation on the Academic Council.

SNIPES lays stress on physical conditions

The Society for the National Institutes of Physical Education (SNIPES) has suggested that emphasis should be laid on physical conditioning for achieving better results in national and international meets. The Chairman of the SNIPES, Dr Amrik Singh, said that norms for physical conditions should be strictly adhered to and physical conditioning of every trainee should improve from one coaching camp to another. Every trainee would therefore be provided with a detailed report on his physical conditioning performance after the conclusion of the first camp. He would be required to attain those standards on his rejoining the camp after a lapse of one or two months. In case he falls short in the standards achieved by him in the first camp, he should be excluded from the second camp.

According to Dr Amrik Singh, the concept for gymnastics should be popularised as gymnastics was nursery for all sports. He said that SNIPES would shortly prepare a detailed techni-

---

Association of Indian Universities

D.D. Upadhyaya Marg, New Delhi-110002

Correspondence Course in Evaluation Methodology & Examinations

Applications are invited from College/University Teachers for admission to a Basic Level Correspondence Course in EVALUATION METHODOLOGY AND EXAMINATIONS. The duration of the course will be six months (1st July, 1980 to 31st Dec., 1980). The course is likely to be conducted from four regional Centres (Mysore, Bombay, Shillong and Delhi) and will be coordinated by the Research Cell of the Association. A personal 'Contact Programme' at the centres is also planned.

Requests for prospectus and prescribed application forms, accompanied by a crossed Indian Postal Order for Rs. 5/- drawn in favour of the Association and a self addressed stamped envelope (45 paise) should reach the undersigned. The last date for the receipt of applications in the prescribed form, will be **July 15th** for non-sponsored and **July 31** for sponsored candidates.

Prof. V. Natarajan

cal booklet which would be circulated to all schools, colleges and universities.

At its meeting in Delhi the SNIPES decided to provide adequate assistance to akharas of repute in the capital. Imported sports equipments would be provided to the national sports federation, state sports councils and other organisations whenever the equipment was not in use at the NIS.

The question of opening of the NIS eastern centre in the Salt Lake area in Calcutta has been deferred until July 1981 by which time certain infrastructure to run the centre would be completed.

Nehru fellowships announced

The Jawaharlal Nehru Memorial Fund has announced the award of Jawaharlal Nehru Fellopships to Dr T.C. Anand Kumar, Dr Bodhayan Chattopadhay and Mr K.S. Srinivasan. Dr Anand is Associate Professor of Experimental Biology at the All-India Institute of Medical Sciences, New Delhi. He is recipient of S.S. Bhatnagar Award for biological sciences in 1977. He has demonstated that insulin nasal spray could replace the current practice of daily injections of the drug in the management of diabetes mellitus. Dr Anand Kumar proposes to utilise his fellowship to extend his studies to the development of sprays for therapeutic purposes.

Dr Chattopadhyay is a well known scholar in the field of Indian economic development. He has been engaged in comparative studies of agricultural development both in India and abroad. He has been a consultant to a number of UN bodies including UN Research Institute for Social Development and the Economic Commission for Asia and the East. Dr Chattopadhyay will devote his fellowship to a system-analytic study of problems of growth and development in Eastern India since 1900.

Mr Srinivasan has been a student of philosophy and literature. His critical study of the literary aspects in the Ramayana in Sanskrit and Tamil reveals him as a widely read scholar. Mr Srinivasan will utilise the fellowship for a study of the 'Cultural Exchange across the Vindhyas' which will cover the interaction over the ages between the North and the South in the cultural literary and mythological fields.

The Nehru Fellowship is tenable for two years and carries a monthly stipend of Rs 3,000 and an annual contingency grant of Rs 10,000.

AICS approval for new sports policy

Field Marshal S.H.F. Manekshaw, President, All-India Council of Sports, is understood to have given a green signal to the national sports policy. The recommendations are now with the Ministry of Education, Government of India and the draft is expected to be tabled before the Lok Sabha during the current session.

The final version of the draft has been approved after making the changes suggested by different state sports departments, sports councils and all those who were concerned with sports. The draft sub committee was headed by Mr M.R. Krishna with Mr R.L. Anand, Director, NIS, Patiala and Dr Robson as its members.

The revised sports policy envisages that the country should concentrate upon hockey and athletics in which India has been doing fairly well in the international and olympic competitions. For improvement in this regard it has been suggested that all the central schools, schools run by Railways, Defence and other Government agencies should include hockey and athletics in their sports curriculum.

The state sports councils and the Association of Indian Universities should carry out direct or through the district sports councils a survey of the existing facilities for sports available in educational institutions and draw up time-bound programmes for the consideration and approval of State Governments and the Centre so that during the next two plan periods minimum physical facilities are provided at various levels.

PERSONAL

1. **Mr. Saiyid Hamid, Chairman of the Staff Selection Committee has been appointed Vice-Chancellor of Aligarh Muslim University.**
2. **Mr. B.C. Negi, Secretary of the Education Department of Himachal Pradesh, has taken over as officiating Vice-Chancellor of Himachal Pradesh University from Dr. Ganpat Chander Gupt, who has resigned.**
3. **Dr. A. R. Kidwai, Governor of Bihar and Chancellor of Universities in the State, has appointed Prof. Uma Nath Jha, Dean, Faculty of Arts and Head of the Postgraduate Department of English, L. N. Mithila University, as Pro-Vice-Chancellor of the University.**
4. **Prof. S. K Bilgrami, Head of the Department of Botany of Bhagalpur University, has been appointed Pro-Vice-Chancellor of the University.**
5. **Dr. K.N. Prasad, Head of the Department of Economics of the Patna University and former Vice-Chancellor of the university has been invited by the US Government to study the educational and economic systems of USA and to deliver lectures on Indian economic problems.**
6. **Prof. V. Natarajan, Project Officer (Exam), AIU, has been invited to present a paper entitled 'Using Latent Trait Theory to Evolve Sample Free Item Analysis' at the Fourth International Conference on Educational Testing at Antwerp, Belgium during June 24-27, 1980. He will also be visiting the Unesco Institute of Education at Hamburg and a few other universities in the Netherlands, Belgium and West Germany.**

UGC history panel stresses emphasis on research

A panel of experts on history appointed by the University Grants Commission has recommended that the history of at least one region other than India should be included in the syllabi of Universities. The panel also feels that students should acquire a working knowledge of at least one classical or modern language in addition to English and study at least one subsidiary subject from the field of social sciences and humanities. These recommendations have been forwarded to the various universities.

On research, the panel has said that while the volume of historical research in India has been steadily increasing, there has been no corresponding improvement in its quality. Ph.D. degree is awarded in many cases *for thesis which are little more* than summarisation of raw data. The panel has suggested introduction of an intermediate degree involving some research before enrolment for the Ph.D. degree. In the field of research the major emphasis has so far been on political history leaving other areas relatively unexplored. The panel's report based on regional workshops observes that many scholars have greater aptitude for research rather than for teaching. Therefore the universities where history is taught at the M.A. level should develop their schools of research. Its members should be encouraged to teach the BA and MA courses but there should be no bar to the employment of research professors and fellows who concentrates primarily on research and make the centres sources of skills and ideas. It also wants that the Indian scholars should be involved in international projects of historical research, especially those sponsored by the UNESCO.

The panel has recommended that the broad foundation for specialisation should be laid during the honours course, the pass course giving general instructions with a wider coverage.

The M.A. course in history should enable students to proceed directly to research by providing an adequate knowledge of history as well as other equipment which the student should require for taking up research. The panel feels that primary object of teaching at the university stage is to produce trained workers for the continuation and development of historical studies.

Prof. R.S. Sharma of the Delhi University was the convener of the panel. It organised four workshops at Gauhati, Mysore, Amritsar and Baroda.

The history panel is one of the several such panels appointed by the UGC to advise it on the objectives of introducing inter-disciplinary approach and production of reading materials, besides, faculty improvement and methods of teaching and evaluation.

Enrolment in higher education declines

The growth rate of higher education in the country, according to Prof. Satish Chandra, Chairman, University Grants Commission, has considerably come down during the past few years. While delivering the tenth Raja Ramdeo Anandilal Podar Memorial Lecture in Jaipur, he said that the average growth rate of higher education had come down from 12 to 14 per cent in the sixties to a cumulative growth rate of less than two per cent during the Fifth Plan. He said that with the enormous expansion of education, the capacity of new students in terms of sophistication, knowledge and critical thinking was infinitely superior to that of the older generation. But this had happened with only the top ten to fifteen per cent of 'favoured students' and the bottom thirty per cent were unable to receive the benefits. This had created disparity among the students.

Those who have been denied the fruits of new knowledge due to their inability to get into the prestigious institutions know instinctively that they have been denied justice by the society. That is the reason for tension in the system. Prof. Chandra said that the annual expenditure on education was Rs. 2500 crores which was second only to defence *but it was less than two per* cent of the gross national product. It was a waste of money to open more and more colleges on political considerations. He stressed the need for qualitative development in higher education.

Universities to take up wildlife research

The University Grants Commission has written to the Vice-Chancellors suggesting that universities which have the necessary infrastructure as well as talent, *take up both studies and research* in wildlife. Conservation of wildlife is assuming a universal problem. In recent years a few universities have shown some interest in research projects relating to wildlife. Besides the recognised school developed by Dr Salim Ali, the studies that have been undertaken are: Gir Lions jointly; by Bombay Natural History Society and Saurashtra University studies on zoo-biology by Mysore Zoo and University of Mysore; ecological studies on Koziranga wildlife sanctuary by Gauhati University; population studies on tigers in Kerala forests in the Periyar Sanctuary area by Union Christian College, Alwayes and *eco-system studies in Bandipur* National Park by Madav Gadgil Group at the Indian Institute of Science, Bangalore.

These are some isolated examples and unrelated to one another and may not help in creating real awareness of the totality and multi-disciplinary nature of studies of wildlife. Much of the work related to wildlife studies and supported by the personnel of the Forest Departments and their wildlife wings. The participation of universities in these studies is also negligible. It is however generally true that the departments of zoology in Indian universities have paid little attention to the study of wildlife with reference to the problems of their biology, ecology, conservation, behavioural studies, etc.

Under these circumstances, the UGC has now circulated a list of illustrative research topics and problems concerning wildlife. These cover status surveys of some of the fast disappearing species. A beginning towards wildlife education has already started in the sense that for the first time the UGC has approved grants of Rs. 7 lakhs for a number of research projects in wildlife. Nearly half of the total grant is meant for studies of memmals. Other research topics include the forest eco-system of western ghats of Karnatka besides the behaviour of migratory birds and Rhesus monkeys. An ecological survey of the sprawling Chilka Lake in Orissa is among the research projects which are before the Commission for its approval. Prior to this the Commission had organised a seminar in Shilling to bring together scientists from universities, forest departments, Natural History Society and Wildlife Boards to discuss the emerging urgent problems related to wildlife in India. The seminar helped in identifying specific projects which the universities could take up on their own or in collaboration with the wildlife board.

Environment research panel

The University Grants Commission has set up an expert committee to promote studies and research in environmental sciences. This is a follow-up to a national seminar organised last year which made specific recommendations for the development of environmental education at the university level. Only a few universities in the country are at present offering master's degree programmes in environmental sciences with emphasis on biological aspects or physical sciences. These include Jawaharlal Nehru University, Delhi, Awadhesh Pratap Singh University, Rewa, Saurashtra University, Rajkot, Madurai University and the North-Eastern Hill University in Shillong. A few other universities have included some of the courses of studies in the normal *master's degree programme.*

During the Fifth Plan period a number of projects have been funded by the UGC in the areas of environmental sciences. One of the major projects in progress relates to the process of decertification in Saurashtra undertaken by the Department of Biological Sciences, Saurashtra *University.*

Pondicherry law college steps up publication programmes

The Government Law College, Pondicherry, was established eight years ago for imparting legal education in the Union Territory. Within this short period it has attained the status of a full-fledged Law School having a contingent of full time lecturers. Senior members of the Bar are also being invited to give lectures on procedural laws. Another special feature in this regard is that this college is having two full-time research assistants who are devoting their time on research and helping the postgraduate students in preparing their dissertations. Their service is also deployed for conducting various seminars and conferences in the field of law. Instructions are not only imparted at undergraduate level but also at postgraduate level in two branches viz. Criminology and Criminal Administration and Administrative Law and Labour Law.

The institute has unique privilege of conducting the All-India Moot Court Competition every year for the purpose of selecting the Indian team to participate in the International Moot Court Competition to be held in Washington under the auspices of Jessup International Moot Court Society.

The college is running Legal Service Clinic wherein the students and teachers are involved in rendering service to the poor and downtrodden. The college has been organising a number of seminars, symposia and extension lectures covering various aspects of current socio-legal problems. The college has streamlined a foundation course on the Criminal Justice System with a view to assisting the officials of Pondicherry Government in preparing for the criminal judicial tests. The college has been organising a number of seminars on Law and Social Defence, Suppression of Immoral Traffic, participation in Social Defence, etc. in collaboration with the National Institute of Social Defence, Government of India, New Delhi, every year. It also brings out an annual professional law journal entitled 'Law and Social Problems'. The first three volumes devoted to women and law, population and law and child and law, have been released and the fourth volume devoted to labour and law will be brought out during the academic year 1980-81. The college has evolved a scheme under the practical training programme for the final year B.L. students under which eminent jurists, lawyers and judges are invited to deliver a series of lectures on professional ethics and conduct.

The college under the National Adult Education Programme is planning to establish community legal service projects in Pondicherry which may cater to the needs of everyone to solve their day-to-day legal problems. Starting of joboriented diploma courses like cooperative law and management, comparative law and jurisprudence etc. are some of the other future plans of this institution.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bansal, Ashok Kumar. A study of robustness in statistical inference for non-normal distributions. University of Delhi.
2. Khandpur, S.L. Magnetohydrodynamic boundary layers. Agra University.
3. Malhotra, Anand Mohan. A study of block-wise error-locating/correcting and generalized codes. University of Delhi.
4. Singhal, Ravi Kumar. A theoretical study of fluid flows with special reference to dusty viscous, viscoelectric MHD flows. Agra University.
5. Tomar, Ramesh Chand. Biorthogonal polynomials suggested by classical orthogonal polynomials. University of Delhi.

Physics

1. Ahmad Raza. Preparation and applications of indium tin oxide in photothermal and photovoltaic energy converson. I.I.T., Delhi.
2. Chavan, Sopanrao Hanamantrao. Studies of ferroelectric crystals—triglycine sulfate, triglycine selenete and triglycine sulfate—selenete. Shivaji University.
3. Chowdhry, Ravinder. Physico-chemical analysis of inks on paper in context of questioned document examination. University of Delhi.
4. Dattagupta, Jayasri. Fault graphs and their applications to fault detection and diagnosis of digital circuits. University of Calcutta.
5. Gupta, V.P. A theoretical investigation into the effective charge parameter and dielectric polarization in ionic crystals. Agra University.
6. Harsh, O.K. Intensity of high energy plasma satellites in the X-ray emission spectra of solids. Agra University.
7. Jain, Vimal Chandra. Application of exchange charge polarization model in studies on the dielectric and elastic properties of ionic solids. Agra University.
8. Joshi, Janardan. Excited state relaxation and energy transfer studies in rare earth ions. Kumaun University.
9. Lohiya, Daksh. Particle creation in de Sitter universe. University of Delhi.
10. Parameswaran, K. Studies on ionospheric absorption at the magnetic equator. University of Kerala.
11. Prabhat Kumar. Investigation of some problems of accelerated frames and gravitational fields. Agra, University
12. Ramakishore, P. Field and frequency effects on nematic liquid crystal mixtures. Nagarjuna University.
13. Rana, J.P.S. Investigation of lattice vibrations and allied properties of ammonium and silver halides. Agra University.
14. Sardesai, Pandurang Lakhba. Studies in light scattering. Marathwada University.
15. Sharma, Ramesh Chandra. High power electromagnetic wave propagation in plasmas and semiconductors. Agra University.
16. Singh, Ramadhar. Electrical behaviour of undoped and highly doped vanadium dioxide crystals. University of Delhi.
17. Sinha, Krishna Nand. Molecules in the solar atmosphere. University of Gorakhpur.
18. Sreenivasan, S. Analysis of the infrared internal vibrations of certain crystals. University of Kerala.
19. Srivastava, R.L. Application of plasma oscillations to the X-ray absorption of metal. Agra University.
20. Supe, Dinkar Shankarrao. Some studies in time dose relationship in radiotherapy. Nagpur University.
21. Venkata Krishna, Komanduri. Electrical transport properties of pure and doped p-type InSb and n-type PbTe semiconductor films. University of Delhi.

Chemistry

1. Agrawal, Indu. Chemical study of essential oils from some indigenous aromatic plants. Kumaun University.
2. Agrawal, P.C. Study of some metal sulphide electrodes. Agra University.
3. Amrita Kumari. Studies on mixed haloantimonates (III). I.I.T., Delhi.
4. Basu, Aparajita. Applications of thiosalicylamide in electroanalytical techniques. University of Calcutta.
5. Bhargava, Shoba. Some abinito studies using FSGO model. University of Delhi.
6. Bhoi, Chhaganbhai Dhulabhai. Styrenation and epoxidation of semidrying oils. Sardar Patel University.
7. Biswas, Himadrikumar. Physico-chemical aspects of dye partition technique for the determination of functional groups in detergents and high polymers. University of Calcutta.
8. Brajesh Kumar. Interaction of tartaric acid with copper (II), zinc (II), antimony (III) and vanadium (IV). University of Delhi.
9. Das, Susil Kumar. Application on substituted selenoureas in the determination of platinum metals. University of Calcutta.
10. Dixit, Kirtiwardhan Rajendrakumar. Studies in some mixed ligand complexes of gallium (III) and indium (III). Nagpur University.
11. Dubey, M.C. A polarographic study of the influence of various experimental conditions on the electrode kinetics of the irreversible reduction of some inorganic depolarizers. Agra University.
12. Durga Kumari. Phytochemical study of Schistocarpha bicolor and gardenia gum and synthesis of some recently isolated flavonoids. University of Delhi.
13. Gautam, Mamta. Analysis of metals by solid-liquid separation after liquid-liquid extraction. I.I.T., Delhi.
14. Gupta, Kamal. Oxidimetric determination of some organic compounds. University of Jabalpur.
15. Gupta, P.M. Studies on interfacial adsorption of some surface active substances and their role in the stabilization of emulsions. Agra University.
16. Indra Rani. Studies on transition metal chelates of some oximes. University of Delhi.
17. Jain, Ravi Kumar. Synthesis of some reactive methylene compounds with chemotherapeutic activity and their use as analytical reagents in laboratory. Agra University.
18. Kaushik, S.M. Solid state, thermal and photochemical decomposition studies on fluoroperoxozirconates. I.I.T., Delhi.
19. Kesrale, Suresh Bhujangrao. Kinetics and thermal decomposition of some transition metal complexes. Marathwada University.
20. Khanduri, Budhi Ballabh. A new pentaene antibiotic: Pentaene G^8. Agra University.
21. Kulshreshtha, Hemant. Investigations on analytical potentialities of some heterocyclic hydrazones. University of Delhi.
22. Masohan, Asha. Study of sulphur compounds in Darius crude. Garhwal University.
23. Mathur, Rajeev Mohan. Studies on the chemical properties of sulphonated eucalyptus wood. Garhwal University.
24. Nageswar, Y.V.D. Synthesis of certain heterocyclic systems from embelin. Kakatiya University.
25. Nigam, Satish Chandra. Synthesis of some nitrogen heterocycles and their pharmacological studies. University of Delhi.
26. Panda, Kshma Nidhi. Physico-chemical studies in aqueous, non-aqueous and mixed media. Sambalpur University.
27. Pathak, Chandrakala. Studies in some aspects of

prebiological formation of biomolecules. Kumaun University.

28. Pathak, R.B. Studies on pesticidal, aromatic and heterocyclic compounds. University of Gorakhpur.

29. Patnaik, Samuel. Kinetics of reactions in solution involving some metal and non-metal ions. Utkal University.

30. Rahmani, Mujahid Rafi. Studies on a broad spectrum polypeptide antibiotic (FR-79). Agra University.

31. Rajiv Kumar. New mixed ligand complexes of some rare earth metals. Agra University.

32. Sadashiva, B.K. Synthesis and properties of some thermotropic liquid crystals. Bangalore University.

33. Sanjeev Kumar. Studies on kinetics of some catalysed and uncatalysed oxidation reactions of organic compounds with potassium hexacyanoferrate (III). Agra University.

34. Sethi, Kanta. Mechanism of the Darzens condensation and pyrolysis of glycidic esters. I.I.T., Delhi.

35. Sharma, Brahmesh Kumar. Physico-chemical studies of wax emulsions with surfactants as emulsifying agents. Garhwal University.

36. Sharma, Chhatrapal. Studies on the preparation and characterization of dithiocarbamate, xanthate and carboxylate complexes of diorgano and triorganotin (IV). University of Delhi.

37. Sharma, V.K. Studies on the application of some n-substituted oxamic acids in the estimation of some lanthanides. Agra University.

38. Shrivastava, Rajneesh Kumar. Studies on calorie and nutrients of some seeds. Ravishankar University.

39. Siddalingaiah, A.H.M. Stabilities of the metal complexes of diphenyl-carbazone and its nuclear substituted derivatives. Karnatak University.

40. Singh, A.K. Microchemical and toxicological studies of some poisonous plants. Agra University.

41. Singh, Kaushal Kishore. Studies in organic pesticides. University of Gorakhpur.

42. Singh, Ram Pravesh. Kinetics and mechanism of oxidation of some organic compounds by one electron oxidant. Magadh University.

43. Singh, Rishi Pal. A study of coumarins oxygenated in pyrone ring. University of Delhi.

44. Siraj, Pitta N-methylaminophenol sulphate as a new analytical reagent in the assay of some drugs. Andhra University.

45. Siya Ram. Studies in conformationally restricted antihistaminics and asar of biodynamic agents. Agra University.

46. Surendra Kumar. Studies on the polymerisation of trioxane by irradiation and other initiators. University of Delhi.

47. Trilok Chandra. Studies of interfacial tension and electrical properties of oil-in-water emulsions. Garhwal University.

48. Tripathi, Ajai Mani. Structure and chemistry of some hetropoly acids of biological interest. University of Gorakhpur.

49. Tuli, Rajinder Kumar. Preparation and characterisation of some organometallic complexes of titanium (IV), zirconium (IV) and hafanium (IV). University of Delhi.

50. Verma, K.K. Studies on organic functional group analysis. *D.Sc.* University of Jabalpur.

51. Vij, Prem Kumar. Studies on the preparation and properties of some new organometallic compounds of niobium (IV) University of Delhi.

52. Zaidi, Nafissa Begum. Synthetic 4-quinazolone derivatives with tuberculestatic activity. University of Gorakhpur.

Earth Sciences

1. Anantha Narayana, D.B. Mineralogical and pharmaceutical investigations on South Delhi kaolinite deposits. University of Delhi.

2. Bhattacharyya, Nirmalendu. Investigations on some aspects of simulation of Schlumberger curves and computer model studies. Andhra University.

3. Bhuin, Nemai Chandra. Geophysical studies over parts of Jhara Coalfield using gravity, magnetic and electrical resistivity methods. I.S.M., Dhanbad.

4. Das, Alok Nath. Degradation kinetics and its role in heterogenous combustion of cross-linked polymer. I.S.M., Dhanbad.

5. Dasgupta, Subhashchandra. Structural geology and petrology of an area West of Bhilwara, Rajasthan. University of Calcutta.

6. Ramalingeswara Rao, Buddha. Investigations of probabilities and risk of earthquakes on the Indian subcontinent. Andhra University.

7. Thorat, Tanjirao Dnyandeo. Geological studies on the coastline between Jamnagar and Okha Madhi in Saurashtra with special reference to geomorphology and neotectonism. M.S. University of Baroda.

Engineering

1. Ashwani Kumar. Combustion of liquified petroleum gas in a packed bed. I.I.T., Delhi.

2. Deb, Prabir. Precipitation and ferrite recrystallization in high strength low alloy steels. I.I.T., Delhi.

3. Haider, Syed Zahier. Effect of partial admission on the performance of a centrifugal blower. I.I.T., Delhi.

4. Patel, Madhukar R. A study of performance limitations in phased arrays and some methods to overcome them. I.I.T., Delhi.

5. Rekhi, Tarlochan Singh. Physico-chemical mechanisms governing the engineering behaviour of lime and lime-fly ash stabilized silt. I.I.T., Delhi.

6. Sankaran, R. Investigations on the unbalanced steady-state and transient performance of voltage-fed linear induction machines. University of Kerala.

7. Saraf, Gulshan Rai. Computer simulation and optimization of a refrigeration system. I.I.T., Delhi.

8. Sewa Singh. Mechanics of upland erosion. I.I.T., Delhi.

BIOLOGICAL SCIENCES

Botany

1. Desh Bandu. Morphological, embryological and breeding studies in genus Linum. Agra University.

2. Dinesh Kumar. Floristic and phytosociological studies on the vegetation of Bund-Baretha, Rajasthan. Agra University.

3. Dixit, G.B. Cytogenetic and chemotaxonomic studies in some Passiflora species. University of Bombay.

4. Dixit, R.B. Ecology of leaf surface microorganisms of barley in relation of Alternaria alternata (Fr.) Keissler. Agra University.

5. Gaur, Ashok. Studies on disease of citrus fruits and potato tubers occurring in transit and storage and their control. Agra University.

6. Gupta, K.C. Studies on mosaic disease of sunflower, Helianthus annuus L. with special reference to its control. Agra University.

7. Gupta, Y.K. Phyllosphere studies of micro-organisms of sunflower in relation to Alternaria alternata (Fr.) Keissler. Agra University.

8. Jadhav, Bharati Bapurao. Agronomic studies on leaf protein production VI. Marathwada University.

9. Joshi, Anil Prakash. Effect of clipping on biomass, productivity, energy budget and mineral cycling of barseem, Trifolium alexandrinum Linn. Garhwal University.

10. Lakshmi Devi, S. Studies on the enzymes nitrate and nitrite reductase in Lemna paucicostata Hegelm. University of Delhi.

11. Lavanie, Umesh Chandra. Application of chromosome banding technique as a parameter for chromosome identification in Leguminosae. University of Calcutta.

12. Mittal, Rajesh Kumar. Studies on seed and seedling mycoflora of some forest trees and its control. Garhwal University.

13. Narwal, R.P. Growth and productivity studies in some genetically different wheat varieties. Agra University.

14. Pandey, Uma. Leaf-fall, litter decomposition and pattern of nutrient release in a mixed oak-conifer forest. Kumaun University.

15. Prakash Raghav. Antibiotic producing actinomycetes from the soil of usual habitat in Agra District. Agra University.

16. Rajendra Kumar. Investigations into the causes of

fruitlessness and seedlessness in Tecoma stans L. and Tabebuia pentaphylla. L. Agra University.

17. Ray, Tapati. Physiological and biochemical aspects of colchicine response in different plants. University of Calcutta.

18. Sawdekar, Vishweshwar Bhalchandra. Embryological studies in some members of Tubiflorae. Nagpur University.

19. Sethi, Inderjeet. Studies on the morphogenesis of three Indian isolates of Puccinia graminis tritici in axenic culture. University of Delhi.

20. Sharma, Om Prakash. Studies on microbial deterioration of finished leather. Agra University.

21. Sharma, Rajendra Prasad. Morphological studies in Cajanus cajan (L) Millsp. with special reference to induced mutagenesis. Agra University.

22. Shastri, Madhusudan Balkrishna. Studies in angiosperms: Taxonomic, embryological and cytological studies of the flora of Koni, Bilaspur. Ravishankar University.

23. Sree Rama Murthy, G. Anatomical studies in some solanaceae. Sardar Patel University.

24. Tiwari, S.C. Studies on phytosociology, plant biomass, and net primary productivity of four grass land communities of Pauri Hills, Garhwal. Garhwal University.

25. Yash Paul. Studies on glycoprotein of legume seeds. Punjab Agricultural University.

Zoology

1. Advant, Sharad Bhalchandra. Studies on the ciliates of amphibians. Marathwada University.

2. Badola, S.P. Ecological studies on the ichthyofauna of some freshwater resources of Garhwal Region. Garhwal University.

3. Bandyopadhyay, Ratna. Effects of certain environmental pollutants on mammalian chromosomes and their components. University of Calcutta.

4. Chattopadhyay, Tapankumar. Systematic study of gobid fishes of India with special reference to those of Gangetic delta. University of Calcutta.

5. Chaturvedi, Shashi Prabha. Immunological studies in breast carcinoma cases. Agra University.

6. Chaudhary, R.C. Histo-morphological studies of a fresh water teleost, Mystus cavasius (Hlam Buch) and histochemistry of its digestive organs. Agra University.

7. Dutta, Sushil Kumar. Biology and the effects of fertilizers and chemicals on the eggs, developmental stages and adults of Indian bull frog, Rana tigerina. Utkal University.

8. Gera, Subhash Chandra. Studies on the urinogenital system in certain Indian fresh water turtles, with special reference to seasonal variations in gonads and the pituitary in Kuchuga tecta Gray. Agra University.

9. Gupta, Y.C. Taxonomy, zoogeography and bionomics of some Indian Gerridae: Hemiptera. Agra University.

10. Haranath, V. Bhaskara. Studies on some aspects of starvation induced metabolic modulations in selected tissues of Tilapia mossambica Peters. Sri Venkateswara University.

11. Kaushal, Rup Lal. Some aspects of accumulation, metabolism and cytological effects of DDT on Stylonychia notophora, Blepharisma intermedium and Tetrahymena pyriformis (Ciliata). University of Delhi.

12. Maheshwari, Subhash Chand. Studies on the chemosterilization of red cotton bug, Dysdercus koenigii F. University of Delhi.

13. Maru, Braj Kishore. A comparative neurohistoenzymological study of the tongue of certain vertebrates with special reference to their gustatory mechanism. University of Delhi.

14. Narang, Vasdev. Histochemical and biochemical study of certain mammalian and avian muscles under normal and experimental conditions with special reference to m-ATP ase. University of Delhi.

15. Radhakrishnan, S. Studies on certain fish parasites and the nature of infestation along the South West Coast of India. University of Kerala.

16. Saha, Chandrima. Antifertility and related studies on the extractives of Aristolochia indica Linn. University of Calcutta.

17. Sahi, Deep Narain. A contribution to the herpetology of Jammu and Kashmir state. University of Jammu.

18. Saralamma, P.G. A comparative study of the cellular organisation of the endocrine pancreas in lower vertebrates. University of Kerala.

19. Satya Bharathi, Vedula. Studies of some aspects of ecology and histochemistry of mosquito larvae of Aedes aegypti Linn. and Culex fatigans Wied. Andhra University.

20. Sharma, S.N. Comparative study on the brain and cranial nerves of certain fresh water toleosts and correlation with their feeding habits. Agra University.

21. Shete, Shivaji Ganpatappa. Studies on some protozoan parasites of amphibians. Marathwada University.

22. Sinha, Prabeer Kumar. Studies on the mode of action of antiestrogens in albino rats during experimentally induced delayed implantation. University of Delhi.

Medical Sciences

1. Jadhav, Suresh Sakharam. Pharmacological and immunological studies on Bordetella pertussis toxin. Nagpur University.

2. Kasture, Pramod Vinayak. Studies on the biological availability of drugs in presence of surface active agents. Nagpur University.

3. Mitra, Jayati. Differentiation of thymus and spleen in human fetuses. University of Calcutta.

4. Saradambal, K.V. Studies on glutamate dehydrogenase in mycobacteria. University of Delhi.

5. Somasekhar, Gopalam. Genetic studies on untypable strains of Salmonella typhi. University of Delhi.

Agriculture

1. Agarwal, Bina. Physiological studies on differential adaptability of rice varieties under iron stress. Chandra Shekhar Azad University of Agriculture and Technology.

2. Agarwal, Veena. Studies on genetic parameters of some metric traits related to productivity in triticale. Chandra Shekhar Azad University of Agriculture and Technology.

3. Arya, Ram Sewak. Studies on the effect of different levels and method of nitrogen application on growth, yield, quality and storage behaviour of banana (var. Harichhal). Chandra Shekhar Aazd University of Agriculture and Technology.

4. Arya, Ranjana. Biodynamics of organic matter in soils. Chandra Shekhar Azad University of Agriculture and Technology.

5. Atheya, Satya Charan. Fungi associated with barley seed. Chandra Shekhar Azad University of Agriculture and Technology.

6. Awasthi, Chandra Prakash. Biochemical investigations in pea, Pisum sativum L. Chandra Shekhar Azad University of Agriculture and Technology.

7. Batra, Ramesh Chandra. Biology and control of Phyllocnistis citrella Staninton (Lepidoptera: Phyllocnistidae) on some citrus nursery hosts. Punjab Agricultural University.

8. Dhingra, Munish Kumar. Effect of cropping season, stage of muturity and methods of extraction on quantity and quality of pectin in guava, Psidium guajava L. Haryana Agricultural University.

9. Dwivedi, Kusum. Studies on Drechslera leaf spot of mung, Phaseolus aureus Roxb. Chandra Shekhar Azad University of Agriculture and Technology.

10. Gulam Mohmad. Water use efficiency, yield and quality of raya (Brassica juncea Coss) in relation to water stress, sowing methods and nitrogen levels. Haryana Agricultural University.

11. Jagdish Prasad. Effect of nitrogen and growth retardant (Cycocel) on the yield and quality of sweet potato, Pomoa batatos (L.) Lam. Agra University.

12. Kapoor, Sita. Quality characteristics of wheat as affected by genetic and agronomic yield increasing factors. Chandra Shekhar Azad University of Agriculture and Technology.

13. Khan, Ashfaq Husain. Distribution and consumption pattern of fertilizers in Uttar Pradesh. Chandra Shekhar Azad University of Agriculture and Technology.

14. Khanna, Rekha. Studies on the caecal symbiotes in Heteroptera. Chandra Shekhar Azad University of Agriculture and Technology.

15. Khurana, Arjan Dass. Studies on resistance on forage sorghum to Chilo partellus (Swinhoe), '(Lepidoptera: Crambidae) and Atherigona soccata (Rondani) (Diptera: Muscidae). Haryana Agricultural University.

16. Madan Lal. Evaluation of F_1 almond hybrids. Punjab Agricultural University.

17. Malik, R.S. Study of heterosis in antirrhinums, Antirrhinum majus L. Agra University.

18. Misra, B.N. Studies on the effect of graded levels of major nutrients (nitrogen, phosphorus and potash) on the growth, nutritional uptake, grain yield and malting quality of 2-row barley, Hordeum distichum L. variety Clipper. Agra University.

19. Sarmah, Rabin Chandra. A study of the farmers in respect to their credit oriented farming in small farmers' development agency, Kamrup Distt., Assam. Chandra Shekhar Azad University of Agriculture and Technology.

20. Sarswat, D.P. Effect of different levels of nitrogen, phosphorus and seed rates on the growth, yield and quality of oil seed flax, Linum usitatissimum Linn. Agra University.

21. Saxena, H.K. Storage economy of wheat grain in Agra Distt with special reference to Bichpuri Block. Agra University.

22. Sharma, Jitendra Nath. Granulation studies in Musambi and response of different chemicals. Chandra Shekhar Azad University of Agriculture and Technology.

23. Shukla, Jagdamba Prasad. Pre and post-harvest physiology of Jamun (Syzygium cominii Skeels) fruit. Chandra Shekhar Azad University of Agriculture and Technology.

24. Singh, Harihar Prasad. Studies on soils of the Gangetic alluvium in relation to sugarcane, Saccharum officinarum and wheat, Triticum aestivum crops. Agra University.

25. Singh, Prem Veer. Studies on the effect of nitrogen nutrition and gibberelic acid on acid lime, Citrus aurantifolia Swingle. Chandra Shekhar Azad University of Agriculture and Technology.

26. Singh, Sudhakar Prasad. A diallel cross study in some development traits of Brassica campestris (L.) var yellow sarson. Chandra Shekhar Azad University of Agriculture and Technology.

27. Singh, Surendra Pratap. Plant type and yield components analysis in paddy, Oryza sativa L. Chandra Shekhar Azad University of Agriculture and Technology.

28. Singh, Ved Pal. Effect of levels of irrigation and flag leaf defoliation on yield, nutrient uptake and water use efficiency of wheat, Triticum aestivum L. varieties. Haryana Agricultural University.

29. Sinha, Triveni Shankar. Studies on induced mutation in rice, Oryza sativa by single and combined treatments with X-rays, dimethyl sulphoxide and triethanolamine. University of Calcutta.

30. Subhash Chander. Cation exchange equilibria with special reference to sodification and Zn and K adsorption in soil. Haryana Agricultural University.

31. Sudesh Kumar. Genetic analysis for some quantitative and qualitative characters in Okra, Abelmoschus esculentus (L) Moench. Himachal Pradesh Krishi Vishwavidyalaya.

32. Tandon, Pramod Kumar. Studies on zinc and iron nutrition of rice. Chandra Shekhar Azad University of Agriculture and Technology.

33. Tewari, Sarda Prasad. A critical appraisal of Agricutural growth in Uttar Pradesh during the plan periods. Chandra Shekhar Azad University of Agriculture and Technology.

34. Tilak Chandra. Studies on combining ability and stability parmameters in Macaroni wheat, Triticum durum Desf. Chandra Shekhar Azad University of Agriculture and Technology.

35. Vishnuvat, Karuna. Seed mycoflora of lentil, Lens culinaris Medic. Chandra Shekhar Azad University of Agriculture and Technology.

36. Yadava, Hukam Chand. Studies on inheritance and nature of resistance to bacterial leaf spot, Xanthomonas phaseoli (Smith) Dowson of mung bean, Vigna radiata L. Wilczek synonyn Phaseolus aureus Roxb. Haryana Agricultural University.

Animal Husbandry

1. Ahmed, Muzahed Uddin. Studies on immunoprophylaxis of irradiated Ancylostoma caninum larvae in dogs. Haryana Agricultural University.

2. Gaya Prasad. Effect of stage of lactation and heat treatments on buffalo milk proteins. Chandra Shekhar Azad University of Agriculture and Technology.

Priorities in Educational Development

(*Continued from page* 328)

ever, to be taken into consideration while deciding this problem.

Another important suggestion, made in the context of technical education, relates to the absence of interaction between industry and technical education which has led to a sort of divorce between them in the field of technological development leading to a mis-match between supply and demand. It has, therefore, been suggested that the industry should assume greater responsibility in undertaking joint financing by industries, technical institutions and the government of technical education and development programmes. This could be done by sponsoring and financing of specific research and development projects by the industry at various institutes of technology and other selected institutes according to time bound and goal-oriented programmes. The industry could also consider the adoption of existing polytechnics for training its manpower by linking the job specification of its establishment to technical education. It could also avail of facilities for non-formal courses and continuing education as part of the career development plans for its employees. These measures will go a long way in integrating technical education with industrial development as also providing the much needed resources for the development of technical education.

To Sum up, the Sixth Plan makes a bold attempt to give higher priority to elementary and adult education programmes, which have been rather neglected in the previous plans. It emphasises qualitative improvement of secondary and post-secondary education and seeks to place a moratorium on the unplanned proliferation of institutions. All these steps are in desirable direction and if implemented, will help in correcting the imbalances that have characterised the development of education in the previous plans. The question, however, remains whether or not we have the political will to implement the programmes, whose beneficiaries will primarily be the traditionally deprived sections of the population and not the urban elites, who have an easy access to the corridors of power. It is difficult to hazard a guess at this stage. ☐

Additions to AIU Library

Association of Indian Universities, Delhi. *Bibliography of doctoral dissertations 1970-75 : Physical sciences.* Delhi, Author, 1979. Lxxix, 519p.

——— *Bibliography of doctoral dissertations 1977-78: Natural and applied sciences.* Delhi, Author, 1980. xxxvi, 474p.

——— *Handbook of medical education 1980.* Delhi Author, 1980. xvii, 170p.

——— *Impact of question banking in universities.* Delhi, Author (c 1979). 95p.

——— *Internal assessment in universities* Delhi, Author, (c 1979). 127p.

——— *Proceedings 54th annual meeting, Patiala, 1979.* Delhi, Author, 1979. 2 Parts. Pt. 1. xxiii, 97p. Pt.2. xxiii, 58p.

——— *Question bank book series. Phase II 15 Physiology.* Delhi Author (c 1979). xvii, 412p.

Australian Vice-Chancellor's Committee, Canberra. *Research contracts negotiated with outside organisations, 1979.* Canberra, Author, 1979. 17p.

Bennett, Nicholas. *Education and development: New strategies to reach the poorest.* Paris, Unesco (c 1977). 31p.

Central Board of Secondary Education, Delhi. *Project technology in schools: Projects and experimental briefs.* Delhi, Author, 1980. 56 p.

Commonwealth Secretariat. *Improving university teaching: A survey of programmes in Commonwealth countries.* London, Author (c 1978). 113p.

Gill, Dhara S. *Education for the rural youth: Some problems of determining learning needs.* Paris, Unesco, IIEP, 1977. 83p.

Glezerman, G. *Socialist society: Scientific principles of development.* Moscow, Progress Publishers, 1971. 271p.

Hershkowitz, Martin, ed. *Statewide educational needs assessment: Results from selected model states.* Silver Spring, Hershkowitz Associates (c 1974). ix, 146p.

India, Ministry of Education and Social Welfare. *Progress of education of scheduled castes and scheduled tribes, 1975-76.* Delhi, Author, 1978. iii, 101p.

India, University Grants Commission. *Status of research in Chemistry in Indian Universities: Report.* Delhi, Author, 1979. iii, 38p.

Indian Adult Education Association, Delhi. *Educational component in agricultural extension service: Report of the Seminar, Ludhiana, 1976.* Delhi Author, 1977. 30p.

Institute of Applied Manpower Research, Delhi. *Student wastage in medical education.* Delhi, Author, 1977. ix, 93p.

International Association of Universities, Paris. *Right to education and access to higher education.* Paris, Author, 1978. 107p.

Joshi, Nandini. *Manpower planning in scientific research institutes.* Delhi, Centre for the Study of Science, Technology and Development, CSIR, 1979. 76p.

Khan, Qamar Uddin. *Manpower aspects of higher education in India* Paris, Unesco, I.I.E.P. (c 1979). iii, 126p.

Liew Kok-Pun, Michael and others. *Workshops in secondary schools, Singapore.* Bangkok, Unesco Regional Office for Education in Asia and Oceania (c 1979). 34p.

Malik, S.C., ed. *Criteria of Status Evaluation in India: Report of a Planning Conference.* Simla, Indian Institute of Advanced Study (c 1977). 72 p.

Panchamukhi, P.R. *Educational reform in India: A century of effort.* Washington, World Bank, 1978. 203p.

Rao, T.V. and Sarupriya. *Perception of college environment, work values and professional aspirations of students of a medical college.* Ahmedabad, Indian Institute of Management, 1975. 60p.

Sharma, M.R. and Sharafat Ali. *Thermal stress index for warm, humid conditions in India.* Bangkok, Unesco Regional Office for Education in Asia & Oceania, 1979. 32p.

Sundaresan, P.N. *Not so unofficial.* Madras, Free Indian Publishing House, 1980. 122p.

Unesco, Division of Educational Policy and Planning. *Education and employment: Policy and planning issues—Synthetic report on the proceedings of the symposium on educational planning, human resources and employment 1976.* Paris, Unesco (c 1977) 29p.

Subscription Rates

Period	Inland	Abroad	
		Surface	Air
	(Rs.)	(Rs.)	(Rs.)
1 year	16.00	80.00	140.00
2 years	30.00	150.00	260.00
3 years	44.00	220.00	360.00
5 years	72.00	350.00	550.00
Single copy	00.80 ps.	4.00	8.00

The Journal is mailed on 1st & 15th of every month.

UNIVERSITY OF DELHI

DELHI-110007

No. Estab. IV/65/80 Dated June 2, 1980.

Applications on the prescribed form are invited for the following posts:

Department		Designation
Faculty of Music & Fine Arts		* One Professor in Karnatak Music
Philosophy	(i)	*One Professor (for South Campus)
	(ii)	*One Reader (for South Campus)
	(iii)	*One Reader
	(iv)	*One Reader with specialization in Philosophy of Science, Philosophical Methodology & Techniques.
Sanskrit	(i)	*One Professor (for South Campus)
	(ii)	*One Reader (for South Campus)
	(iii)	*One Reader
Botany	(i)	*Three Professors (one in the field of Cytogenetics/Ultrastructure)
	(ii)	*Two Lecturers
	(iii)	*Research Associates
Psychology	(i)	*Professor (one)
	(ii)	One Reader
Buddhist Studies		*One Reader
Zoology		*Three Readers (One for CAS)
Anthropology		*Two Readers
Chemistry	(i)	Two Professors
	(ii)	Five Readers
	(iii)	One Research Associate
Physics		One Reader n Ionosphere Physics
Commerce	(i)	One Professor
	(ii)	*One Reader (International Fianace and Liquidity)
	(iii)	*One Reader (for South Campus)
Modern Indian Languages	(i)	*One Professor of Bengali
	(ii)	One Lecturer in Oriya
	(iii)	One Lecturer in Punjabi
	(iv)	One Lecturer in Marathi
English		One Professor
Non-Collegiate Women's Education Board		*One Co-ordinator (only women candidates need apply).
Geology		One Lecturer
Education (C.I.E.)		One Lecturer in Education (Commerce)
History		Four Readers.

Note:—*Indicates that the posts are being readvertised. Those who have applied in response to our earlier advertisements (Nos. 53 to 56 and 61) for these posts need not apply again, but in case they have any additional information to supply, they may do so.

*The post of Reader in the Department of Sanskrit advertised vide advertisement No. 53 as 'Temporary but likely to continue' is now available on substantive basis and is being advertised accordingly. The candidates who wish to be considered for this post should apply afresh.

The scales of the pay of the posts are:

Professor/Co-ordinator : Rs. 1500-60-1800-100-2000-125/2-2500.

Reader : Rs. 1200-50-1300-60-19.00

Lecturer : Rs. 700-40-1100-50-1600.

Research Associate : Consolidated monthly emoluments are as under :

A—Rs. 1,000/- p.m. (Fixed)
B—Rs. 1,200/- p.m. (Fixed)
C—Rs. 1,400/- p.m. (Fixed)

(On the recommendation of the Selection Committee).

All posts, except that of Research Associate, carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

ESSENTIAL QUALIFICATION FOR

Professorships

A Scholar of eminence.

Independent published work of high standard and experience of teaching Post-graduate classes and guiding research for a considerable period desirable.

Professorship in Karnatak Music

A Scholar of eminence.

Independent published work of high standard and long experience of teaching Post-graudate classes.

Readerships

Good academic record with first or high second class Master's Degree in the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work in addition to the published work mentioned above with at least 5 years' teaching experience at Honours/Post-graduate classes essential.

Lectureships

Good academic record with a first or high second class Master's degree or an equivalent degree of a foreign University in the subject concerned.

(Note : Second Class would mean atleast 50% marks in the subject or equivalent grade).

Desirable : (i) A Doctor's Degree or Evidence of Research work of equivalent standard in the subject concerned. (ii) Teaching experience of Degree/Post-graudate classes.

Provded if a teacher is not a Ph.D./M.Phil./M.Litt. at the time of his/her appointment and does not qualify himself/herself for the award of Ph.D./M.Phil./M.Litt. degree from a recognised University in a subject which is being taught by him/her within a period of five years from the date of his/her appointment or does not give evidence of research work within that period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

Research Associateships

Good academic record with first or high second class (B+) Master's Degree or an equivalent degree of a foreign University in the subject concerned.

Note: Initial appointment will be for a tenure period of three years extendable by another two years only. **In no case the tenure will extend beyond 5 years in all.**

Co-ordinator

Good academic record with a first or high Second Class Master's Degree with Doctor's Degree or equivalent published work and teaching experience of Degree Classes of not leas than 10 years;

OR

Good academic record with a first or High Second Class Master's degree with teaching experience of Degree Classes of not less than 15 years.

SPECIAL/DESIRABLE QUALIFICATIONS FOR

Professorship in Karnataka Music

(i) Eminence in the field of Public performance. (ii) A Doctor's Degree. (iii) Original composition/research work of high standard.

Research Associateship in Botany

Research experience in inter-disciplinary areas of Plant Biology.

Readership in Zoology

Specialization in Entomology/Endocrinology/Fish Biology/Cell Biology.

Readership in Commerce (International Finance & Liquidity)

Selected candidates should also be able to teach Finance Courses at the Post-graduate and M.Phil. level.

Readership in Anthropology—(For First Post)

(a) Intensive field work experience in tribal/Peasent Societies.

(b) Specialization & teaching experience in one of the following branches: Kinship, Social Structure, Peasant Social System; Social Change in Tribal Peasant Society, Political Anthropology.

Readership in Anthropology—(For Second Post)

(1) Specialization & teaching experience in one of the following branches :
(a) Human Growth & Development (b) Derenatoglyphics (c) Physiological Anthropology (d) Human Cytogenetics (e) Biochemical & Serological Genetics (f) Human Populaton Genetics (g) Palaeoanthropology.

(2) Intensive field work experience.

Readership in Buddhist Studies

(a) Ability to teach Buddhist literary & Philosophical texts in M. Phil. Classes and guide research on the works of Buddhist Acharyas like Nagasona, Asvaghosa, Nagarjuna, Aryadeva, Dignaga, Asanga, Buddhaghosa, Dharmakirti and so on.

(b) Ability to teach M. Phil. classes and guide research in the field of Buddhist History, Archaeology, Epigraphy, Numismatics, etc.

(c) Consistently good academic record in Pali and Sanskrit (language and literature) and/or History and Archaeology

(d) Knowledge of classical Chinese and/or Tibetan languages.

Professorship & Readership in Sanskrit (South Campus)

Sahitya/Darshana/Epigraphy

Readership in Philosophy (South Campus)

Specialization in Indian Logic & Epistemology together with sound knowledge of original Sanskrit tests.

Co-ordinator

Administrative experience in a recognised institution teaching Degree classes or above.

Lectureships in Botany

Training and experience of Research in Inter-disciplinary areas.

Readership in Psychology

Any one of the following specializations :

(1) Clinical Psychology—with Diploma in Medical and Social Psychology (IM &SP)

(2) Industrial Psychology—with evidence of Research work in the field of Industrial Psychology.

Lectureship in Education

Post-graduate Degree in Education or Degree/Diploma in Education with some teaching experience in schools/training colleges.

Readerships in History

First Post :—Specialization in South Indian History and Culture. Candidate should have done doctoral research in any field of the history of peninsular India (preferable ancient or medieval) and should be proficient in atleast one of the South Indian languages.

Second post :—Specialization in British/European History : Candidate should have specialized in European or British history and have a doctorate in the internal or imperial aspects of the history of Europe or Britain. He should be capable of handling original sources in at least one European language other than English.

Third post :—Specialization in Ancient Indian History : Candidate should be proficient in interpreting literary as well as archaeological sources, and have a doctorate in any field of Ancient Indian History.

Fourth post :—Specialization in Russian and East European History : Candidate should have specialized in Russian and/or East European history with a doctorate in the same field. He must have a good knowledge of Russian and preferably one more European Language other than English.

Lectureship in Geology

Specialization in one or more of the following :

Photo Geology/Remote Sensing/Hydro-Geology/Mining Geology/Mineral Dressing/Mineral Fuels/Engineering Geology.

Lectureship in Oriya

(a) Knowledge of comparative literature and/or linguistics.

(b) Proficiency in English, Sanskrit and a Modern Indian language other than one's own mother tongue.

Lectureship in Punjabi

Training in Linguistisc and Stylistics.

Lectureship in Marathi

1. Ph.D. or a research degree.
2. Knowledge of Comparative literature.
3. Ability to teach in Hindi and English medium.

The prescribed application form can be had from the Information Section of the University either personally or by sending a self addressed envelope (size 13 cm x 28 cm.) with postage stamps worth **Rs. 2.85**.

The candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marksheets, published research articles, etc., should reach the undersigned not later than **2nd July, 1980**.

Note

1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all teaching posts on the recommendation of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates from outside Delhi, for teaching posts only, called for interview will be paid to and fro single second class rail fare.
4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

REGISTRAR

SOUTH GUJARAT UNIVERSITY

UNIVERSITY CAMPUS,
UDHNA-MAGDALLA ROAD,
POST BOX NO. 49,
SURAT-395007

Applications are invited in the prescribed form (in eight copies) for the following teacning posts in the Post-Graduate Departments of the University :

Sr. No. Name of the Department and the Number of Posts

(1) **LINGUISTICS**

One Reader

(i) Sound training and research of merit in Modern Theories of Grammar & Philosophy of Language with some experience of field studies;

(ii) Good command over Gujarati/Marathi.

(2) **ECONOMICS**

One Reader (Econometrics)

(3) **BIO-SCIENCES**

One Lecturer

Major specialisation in Animal Science (Zoology) with Research work in Invertebrate Zoology/Cell Biology/Embryology/Animal Physiology.

(4) **PHYSICS**

One Reader

Nuclear Physics/Particle Physics/(Theoretical)

(5) **CHEMISTRY**

One Reader

Theoretical Chemistry/Physical Organic/Physical/Solid State Chemistry.

(6) **BUSINESS AND INDUSTRIAL MANAGEMENT**

Two Professors

To be selected from following areas :

Marketing Management/Organisational Behaviour & Personnel Management/Quantitative Economics/Entrepreneurial Development/Co-operative Management.

One Reader

Marketing Management/Organisational Behaviour and Personnel Management/Entrepreneurial Development/Co-operative Management.

Four Lecturers

One in Organisational Behaviour and Personnel Management. One in Financial Management, One in Production Management and Quantitative Techniques and the fourth in Marketing Management.

(7) **RURAL STUDIES**

One Reader

A person with doctorate in Economics with specialised work in Rural Industries & Marketing/Rural Finance & Co-operation/

Rural Employment & Manpower Planning will be preferred.

(8) ENGLISH
One Lecturer

Pay Scale are as under :

(1) Professor : Rs. 1500-60-1800-100-2000-125/2-2500.
(2) Reader : Rs. 1200-50-1300-60-1600-Assessment-60-1900.
(3) Lecturer : Rs. 700-40-1100-50-1300-Assessment-50-1600.

In addition to pay the teachers of the University Departments are entitled to draw dearness allowance, House Rent Allowance and other benefit like contributory provident fund and gratuity as admissible from time to time.

Information about the qualifications and application form prescribed for each post can be had from the undersigned on payment of Rs. 7/- in cash or by Postal order alongwith self addressed envelope of 23 cm x 13 cm. size duly stamped with Rs. 0-50 ps.

The last date for receipt of the application will be **30-6-1980.**

G.A. Desai
REGISTRAR

JAWAHARLAL NEHRU UNIVERSITY

Advt. No. Aca. III/4/80

Applications are invited for the 3 posts of Assistant Professors in the Centre for Political Studies, School of Social Sciences of the University, in the Scale of pay of Rs. 700-40-1100-50-1600 plus usual allowances as admissible to the members of the staff in the Central Universities.

Essential Qualifications (Common for all posts)

(a) Consistently good academic record with at least a high 2nd class Master's degree in Political Science or its equivalent qualification from an Indian/Foreign University: and
(b) A doctor's degree or published work of an equally high standard.

Areas of specialisation for each post :

Post No. 1. Political Theory and Thought.
Post No. 2. Government and Politics in India.
Post No. 3. Federalism or Comparative Politics.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very nigh standard, it may relax any of the qualifications prescribed in (a) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed *provided he has done research work for at least two years or has practical experience in a research laboratory/organisation* on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic/professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates will be expected to participate in the teaching and research programmes in the concerned disciplines in other Schools of the University as well as in the programmes offered in their own Centres of Studies

Benefits of C.P. Fund-cum-Gratuity/G.P. Fund-cum-Pension-cum-Gratuity are available as per Univresity rules.

Persons already in employment should route their applications through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Proiessor.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, (*separate for each post*) on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope (affixing Postage Stamps worth Rs. 2.85) of 23 cm x 10 cm size to the Deputy Registrar (Academic) Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067, should reach him latest by 30th June 1980.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant informations such as their names, date and place of birth, merital status, nationality, state of domicile, postal and permanent addresses; father's name and address, academic and professional attainments, full details of (a) publications, and (b) research projects undertaken, language(s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidate's professional work who should also be requested by the candidate to forward to the Deputy Registrar (Academic) confidential report concerning the candidate.

MAHARSHI DAYANAND UNIVERSITY

ROHTAK

Advertisement No. 4/80

Invited applications (through proper channel) for :

PROFESSORS IN: Economics, History and Law

READER IN: History

LECTURERS IN: Economics, History, Chemistry, Physics, Mathematics, Commerce, Business Management, Sociology, Journalism, Law and Sanskrit.

QUALIFICATIONS

(i) PROFESSORS: Very good academic record, Doctoral Degree, experience of guiding research, ten years' teaching experience of Post-graduate classes about 5 years' as Reader.

(ii) READER: Very good academic record, Doctoral Degree, at least 5 years' experience of teaching Post-graduate classes.

(iii) LECTURERS: Good academic record, Doctoral Degree or high standard research work. For Journalism: Good academic record, preferably M.A., in English or other Social Sciences degree/diploma in Journalism. Preference for experienced candidates. For Lecturers in Law : (a) Ph.D. or high second class LL.M. or any other foreign degree equivalent thereto. (b) A candidate having teaching experience may be preferred. For Lecturer in Sociology: Candidates with M.A. in Sociology will be preferred.

SPECIALISATION

Professor in Economics: Macro static Economics/Micro Economics.

Professor in History: Modern History.

Reader in History: Medieval Indian History.

Lecturers in Economics: Statistics/Macro-economics/Agricultural Economics/Micro-Economics.

Lecturer in History: Ancient Indan History.

Lecturers in Chemistry: One each in Inorganic/Organic, Physical Chemistry.

Lecturers in Physics: Electronics/Solid State Physics/Spectroscopy/Nuclear and Particle Physics.

Lecturer in Mathematics: Pure Mathematics.

Lecturer *in* Commerce: A candidate strong in Accounting will be preferred.

Lecturers in Business Management: Finance/Marketing / Personnel / Production.

Lecturers in Sanskrit: Vedic Studies/Sanskrit Grammar/Classical Sanskrit Literature.

NON-TEACHING POSTS

Programme Co-ordinator—NSS: **Rs.** *1100-50-1600.*

QUALIFICATIONS

(i) A second Class Master Degree in Arts/Science/Commerce/Social Work
(ii) At least three years' experience of social service work, preferably in National Service Scheme organisation.

PRESS MANAGER: *700-40-900/40-1100/50-1300.*

At least Good Second Class Bachelor's degree with diploma in Printing Press Management from I.I.T or equivalent qualification and 10 years experience out of which 5 years as Press Manager in a Govt. Deptt./University/Semi-Govt. Organisation or in a private concern of repute.

MICRO-ANALYST : 400-40-800-50-950. At least high second class Master's Degree in Chemistry/Analytical Chemistry/Handling of Sophisticated Instruments or a First Class B.Sc. with ten years' experience as Micro-Analyst in Post-graduate Chemistry Department/Research institute.

ASSISTANT DIRECTOR OF PHYSICAL EDUCATION : 225-15-360/20-500.

QUALIFICATIONS: **Essential**

At least B.A. with D.P.Ed. from a recognised University. Desirable: Outstanding Sportsman preferably NIS trained or M.P.ED.

STORE INCHARGES: 120-5-145/7-180/12-300. B.Sc. with atleast two years experience of Store-keeping of a *University level or equivalent thereof.*

U.G.C. pay scales for all categories of teaching posts, with usual allowances and benefit of Contributory Provident Fund. Reservation for Ex-servicemen/B.C./S.C./S.T. candidates as per rules and no application fee from them.

Qualifications relaxable and higher start admissible in deserving cases. *Knowledge of Hindi essential for all posts.* Those who have already applied for posts of Micro-Analyst and Store-Incharge in response to earlier advertisement need not apply again.

Applications on plain paper with full bio-data, attested testimonials and crossed postal order(s) for Rs. 5/- *for posts carrying basic pay of less than* Rs. 300/- and Rs. 10/- for posts carrying higher basic pay, in favour of Chief Accounts Officer, payable at Post Office, Rohtak, be sent to Registrar by **30-6-1980**.

REGISTRAR

JADAVPUR UNIVERSITY CALCUTTA—700032

Employment Notification No. A2/C/4/80

Dated, May 22, 1980.

Applications are invited in the prescribed form (priced Re. 1/-) per set of four copies and (Re. 1/- extra towards postal charges) for appointment to the following posts :

1. **Proof Reader**—One post.

Scale of pay : Rs. 400-15-430-20-530-25-655-30-865-35-900/-

Qualifications : **Essential**

H.S./P.U. with 3 years experience in proof reading in a reputable Press/Printing organisation.

Desirable

A degree in Arts/Science will be preferred.

2. **Junior Machineman**—Two posts.

Scale of pay : Rs. 400-15-430-20-530-25-655-30-865-35-900/-

Qualifications

(a) Read upto Class VIII.
(b) 7 years experience of working on press machines as skilled Helper

OR

I.T.I. Certificate or equivalent in the relevant line.

3. **Compounder**—One post

Scale of pay : Rs. 400-15-430-20-530-25-655-30-865-35-900/-.

Qualifications : Essential

School Final or equivalent. Certificate in Compoundership/Pharmacy or its equivalent with experience in the line.

4. **Nurse**—One post

Scale of pay : Rs. 540-25-625-30-805-35-910-45-1000/-

Qualifications

School Final or equivalent. Certificate in Nursing or its equivalent with 5 years experience in the line.

5. **Dark Room Processing Assistant** One post

Scale of pay : Rs. 400-15-430-20-530-25-655-30-865-35-900/-

Qualifications

School Final or equivalent Certificate in Photography with experience in the line of Dark Room Assistant.

6. **Junior Mechanic**—8 (eight) posts.
(Trades are ;
2 Electrician;
1 Civil Engineering Mechanic;
1 Tool Room Mechanic and Grinder;
1 Research Mechanic for Physics department;
1 Pattern Maker for Mechanical Engineering Workshop;
1 Electronic Mechanic for Electronics and Telecommunication Engg. Dept.
1 Fitter-Machinist for Mechanical Engineering Workshop).

Scale of pay : Rs. 400-15-430-20-530-25-655-30-865-35-900/-

Qualifications

Read upto Class VIII standard with 7 years experience as Skilled Helper in the relevant line or I.T.I. Certificate or equivalent in the relevant line.

In addition to the scales of pay mentioned above, candidates are entitled on appointment to usual admissible allowances current at this University.

N.B. : Of the total posts as mentioned above the following posts are reserved for Scheduled Casets/Scheduled Tribes candidates subject to availability of qualified candidates.

Junior Mechanic—4 (SC)
Junior Machineman—1 (ST)

Last date of receiving the applications is **28th June, 1980.**

Application forms are obtainable from the University Office during working hours. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment *should submit their application through* proper channel. Choice of the Appointment Board will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR

PUNJABI UNIVERSITY PATIALA

Advertisement No. 16/SPS/PRO/Estt./80

Applications are invited for the following posts :

1. **LECTURERS** (One each in Geography and Persian)
(Grade Rs. 700-40-1100-50-1600)

Qualifications

(a) A Doctor's degree or research work of an equally high standard in the relevant subject, and,
(b) Consistently good academic record with 1st or high second class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.
(c) Qualifications prescribed in (b) above are relaxable in case the research work of a candidate as evident either from his thesis or from his published work is of a very high standard. If a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/organization on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

SPECIALIZATION

Lecturer in Geography : Specialization in any branch other than population and agricultural geography. Other things being equal preference will be given to those who can handle courses in physical geography or political geography/geographical thought and methodology.

Lecturer in Persian : (i) History of Persian Literature. (ii) History of Ancient Persia.

Preference will be given to the candidate possessing efficiency in teaching through Punjabi medium.

2. **LECTURER IN RUSSIAN**
(Grade Rs. 700-40-1100-50-1600)

Qualifications

(a) and (b)—same as in post 1 above.
(c) Qualifications prescribed in (b) above are relaxable in case the research work of a candidate as evident either from his thesis or from his published work is of very high standard. If a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing consistently good academic record may be appointed provided he has done one year post M.A. diploma course in the teaching of foreign language concerned from a University *on the condition that he* will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he

will not be able to earn future increments until he fulfils these requirements.

3. **RESEARCH ASSISTANT** (Nuclear Science Laboratories)
(Grade Rs. 550-20-650-25-750)

Qualifications

Atleast M. Phil. with first rate academic record. Familiarity with vacuum techniques and data analysis is desirable. Selected candidates will be required to assist in the projects on elemental analysis using nuclear techniques.

4. **JUNIOR RESEARCH FELLOWS:**
(U.G.C.)
(One each in Human Biology, Economics, History and Education)
(Rs. 400/- p.m. all inclusive)

Qualifications

Junior Fellowship is open to persons preferably below the age of 30 years, who have obtained a Master's degree of a recognised University in the first or high second division (with atleast 55 % marks or B in the seven point grade system).

5. **RESEARCH SCHOLARS IN BOTANY—2**
(For project entitled "Cytogenetics of Indian Forest Trees")

Qualifications

Atleast Ist class MSc. Botany. Those with specialization/research experience in Cytogenetics will be preferred. Candidates with two years experience in Cytogenetics may be given Rs. 500/- p.m.

GENERAL

Higher start within the grade admissible, depending upon the ability and experience of the candidate. House rent and Dearness allowance, Provident Fund and *Medical facilities* according to the University rules.

Applications, complete in all respects on the prescribed form accompanied by a crossed Postal Order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Caste/Tribes and Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala should reach the University by **30-6-80**. The forms can be had from the Production & Sales Officer, Publication Bureau, Punjabi University, Patiala on payment of Re. 1/- by sending a crossed Postal Order drawn in favour of the Registrar, Punjabi University, Patiala, alongwith a self addressed envelope of the size of 25 x 10 cms. stamped with 30 paise postage which should be superscribed at the TOP in BOLD letters "REQUEST FOR APPLICATION FORM, FOR THE POST OF ————

Persons already in service should apply through proper channel. Government servants who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by **2-7-80**.

REGISTRAR

BIDHAN CHANDRA KRISHI VISHWAVIDYALAYA

P.O. MOHANPUR, WEST BENGAL

Advertisement No. APPTT/4/80

Applications are invited in prescribed forms for the following posts in the scales mentioned below plus other allowances as admissible under the rules of the Viswa Vidyalaya :

A. **Lecturer in Agriculture Chemistry & Soil Science**—(One post) in the scale of Rs. 700-40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Agricultural Chemistry & Soil Science with specialisation in Soil Science or equivalent degree of a foreign University, (ii) A Doctoral Degree in Soil Science & Agricultural Chemistry, preferably in the field of Soil Physics or Physical Chemistry of Soils or published research work of an equally high standard;

Desirable

Teaching or research experience in basic Physical Chemistry/Physical Chemistry of Soils/Soil Physics;

Age

Below 45 years

Those who have applied in response to advt. No. APPTT/5/79 need not apply. Their cases will be considered.

B. **Lecturer in Agricultural Engineering**—(One post) in the scale of Rs. 700-40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Agricultural Engineering with specialisation in Soil and Water Conservation Engineering in M. Tech. or equivalent degree of a foreign University, (ii) A Doctoral Degree in the Subject or published research work of an equally high standard;

Age

Below 45 years.

C. **Lecturer in Horticulture**—(3 Posts against lien vacancies-likely to continue indefinitely) in the scale of Rs. 700-40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Horticulture following a Degree in Agriculture or equivalent degree of a foreign University, (ii) Doctoral Degree in Horticulture or published research work of an equally high standard.

Age

Below 45 years.

D. **Lecturer in Plant Pathology**—(One post against a lien vacancy) in the scale of Rs 700-40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Plant Pathology or equivalent degree of a foreign University, (ii) A Doctoral Degree in the subject or published research work of an equally high standard;

Age

Below 45 years.

E. **Research Scientist III**—(2 temporary posts under AIC Potato Improvement Project) in the scale of Rs. 700-40-1100-50-1600/- (One post for Genetics & Plant Breeding and the other for Entomology)

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Genetics & Plant Breeding/Entomology or equivalent degree of a foreign University; (ii) A Doctoral Degree in Genetics & Plant Breeding/Entomology or published research work of an equally high standard;

Age

Below 45 years.

*The posts of Research Assistants have since been designated as Research Scientist III, the candidates who applied for the post of Research Assistant under this category in response to our advertisement No. APPTT/2/79 need not apply again. Their cases will be considered.

F. **Research Scientist III**—(1 temporary post under AICP on Floriculture in the scale of Rs. 700-40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Horticulture, following a degree in Agriculture or equivalent degree of a foreign University, (ii) A Doctoral Degree in the subject or published research work of an equally high standard;

Age

Below 45 years.

The posts of Research Assistants have since been designated as Research Scientist III, the candidates who applied for the post of Research Assistants under item J. of Advt. No. APPTT/5/79 need not apply. Their cases will be considered.

G. **Research Scientist III**—(2 temporary posts under AICP on Coconut & Arecanut) in the scale of Rs. 700-40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Horticulture, following a degree in Agriculture or equivalent degree of a foreign University, (ii) A Doctoral Degree in Horticulture or published research work of an equally high standard;

Age

Below 45 years.

* The posts of Research Assistants have since been designated as Research Scientist III, the candidates who applied for the post of Research Assistant under this Scheme as per advertisement No. APPTT/1/79 need not apply. Their cases will be considered.

H. **Lecturer in Genetics & Plant Breeding**—(One post against a lien vacancy) in the scale of Rs. 700 40-1100-50-1600/-

Qualification : Essential

(i) A consistently good academic record with first or high second class Master's Degree in Genetics & Plant Breeding or equivalent degree of a foreign University, (ii) A Doctoral Degree in the subject or published research work of an equally high standard;

Desirable

Specialisation in Plant Physiology;

Age

Below 45 years.

I. **Research Officer**—(One post temporary under Scheme for Hill Development Project in the District Darjeeling conducted by the Department of Horticulture) & Rs. 1000/- per month (consoidated).

Qualification : Essential

A first or high second class Master's Degree in Horticulture following a degree in Agriculture & experience in research on Horticultural Crop for a period of at least three years.

Age :

Below 45 years.

J. **Assistant Comptroller**—(3 posts) in the scale of Rs 700-40-1100-50-1600/-

Qualification : Essential

(i) Uniformly good academic record with a (B+) Master's Degree or its equivalent; (ii) At least five years' experience involving supervision, control, planning and management of accounts and audit

OR

Preparation of budget in a Government/Quasi-Government organisation or University/Institute of Higher learning

(iii) Age not below 30 years. Relaxable in case of exceptionally qualified candidates.

Desirable

Membership of Institute of Cost and Chartered Accounts of India or a degree or diploma from a recognised Institute of Management or passes SAS Examination. The requirement of Master's Degree will be waived in the case of candidates with good academic record and at least 10 years' working experience in Senior position in any of the Universities or Institute of Higher learning involving budgeting and maintenance of Accounts and Audit.

K. **Jr. Dairy Technologist**—(One post temporary) in the scale of Rs. 600-35-670-40-870-45-1050-50-1250/-

Qualification : Essential

(i) A Degree in B.Sc. in Dairy Technology, (ii) Two years' experience of teaching or plant work;

Age

Below 30 years.

N.B.

(i) Preference will be given to the candidates having basic degree in Agriculture i.e. B.Sc (Ag.) for the post under category 'A', 'B', 'D', 'E' & 'H'

(ii) For category 'A' to 'H'—if a candidate possessing Doctorate Degree or equivalent research work is not available or is not considered suitable, the person possessing consistently good academic record may be considered for appointment, on the condition that, he/she will have to attain a Doctorate Degree or show evidence of research work of equivalent high standard within five years of his/her appointment failing which he/she will not be eligible to earn increments till he/she fulfils these requirements.

Experience and age limit may be relaxable on the recommendations of the Selection Committee in the case of candidates otherwise qualified. A high initial pay in the scale may be granted on the basis of qualifications, experiences and present emoluments.

Applications must be submitted in the prescribed forms obtainable from the office of the Registrar, Bidhan Chandra Krishi Viswa Vidyalaya, P.O. Mohanpur, Dist. Nadia, West Bengal by remitting crossed Indian Postal Order for Rs. 8.00 (eight) for the categories 'A' to 'J' and Rs. 3.00 (three) for category 'K' in favour of the 'Bidhan Chandra Krishi Viswa Vidyalaya' between 11-30 A.M. & 4-00 P.M. on week days and between 11-30 A.M. & 1-00 P.M. on Saturdays.

Application forms may also be obtained by post by sending a self addressed envelope stamped Re. 0.45 (forty five paise) only and the necessary **Postal Order**.

Persons already in employment should apply through proper channel.

Applications completed in all respects should be submitted to the office of the undersigned by the **30th June, 1980** in an envelope superscribed with the name of the post applied for.

Candidates called for interview will have to appear at their own cost.

A. K. Mitra
REGISTRAR (Actg.)

UNIVERSITY OF BOMBAY
BOMBAY 400032

Centre of Post-graduate Instruction and Research, Panaji, Goa

Applications are invited in the prescribed form for the following *temporary* posts in the Centre of Post-graduate Instruction and Research, Panaji, Goa:

1. Professor of English
2. Professor of History
3. Professor of Economics
4. Reader in Marathi
5. Reader in Portuguese
6. Reader in French
7. Reader in Modern History
8. Reader in Economics
9. Reader in Economics
10. Reader in Sociology
11. Reader in Mathematics
12. Reader in Mathematics
13. Reader in Physics
14. Reader in Physics
15. Reader in Chemistry
16. Reader in Marine Science
17. Lecturer in Marine Science
18. Lecturer in Economics
19. Lecturer in Philosophy
20. Lecturer in Chemistry

The pay-scales of the posts are :

Professor—Rs. 1500-60-1800-100-2000-125/2-2500;
Reader— Rs. 1200-50-1300-60-1900 and
Lecturer— Rs. 700-40-1100-50-1600.

In addition to pay, Dearness Allowance, House Rent Allowance and Compensatory Local Allowance will be paid according to the University rules. All posts carry the benefits of Provident Fund and Gratuity according to the University rules. A higher starting pay may be given to persons appointed to the posts of Professor and Reader in special cases. Other things being equal, preference will be given to candidates from backward classes. The posts of Lecturer are reserved for candidates belonging to scheduled castes and scheduled tribes and will be filled up by appointment of such persons only as shall satisfy the requiremnts regarding qualifications, experience etc. laid down for the posts; povided however, that if no candidate is available from scheduled castes and scheduled tribes, the posts will be filled up by appointment of duly qualified persons from among the other candidates.

The **minimum qualifications** prescribed for the posts are as under :

Professor

An eminent scholar with published work of high quality, actively engaged in research. Ten year's experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader

Good academic record with a Doctor's degree or equivalent published work, Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer

(a) A Doctor's degree or research work of an equally high standard; and

(b) Consistently good academic record with Ist or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

The Executive Council may relax any of the qualifications prescribed in (b) above provided that the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard.

If a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, the Executive Council may appoint a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which, he will not be able to earn future increments until he fulfils these requirements.

Explanation

(1) For determining consistently good academic record, a candidate should either have an average of 55% marks at the two examinations prior to Master's degree (irrespective of the marks obtained in any of the two examinations) or 50% marks at each of the two examinations separately.

(2) For determining high second class, the mid-point between the minimum percentage of marks fixed by a University for award of second class and first class may be taken.

The **additional qualifications** prescribed for the posts are as under

1. **Professor of English**—Must have specialisation in the study of English Language and study of American Literature or Commonwealth Literature. Published work of recognized merit in this area of specialisation.

2. *Professor of History—Must have specialised in the study of history of the Portuguese power in India or must have done research of recognized merit in the colonial history of the Portuguese in Asia, Africa and Latin America. Knowledge of Portuguese and Marathi including modi script.*

3. **Professor of Economics**—Must have done independent research work of recognized merit and have considerable experience in guiding and conducting research work. Must have specialization in Development Economics.

4. **Reader in Marathi**—Must have *specialisation in Literary criticism*, familiarity with modern trends in English Literature and criticism. Evidence of published research work of recognized merit in this field of specialisation. Experience of teaching post-graduate classes and guiding research.

5. **Reader in Portuguese**—Must have a wide background and general competence in his respective field of specialisation, evidence of three years of post-doctoral research and experience of teaching post-graduate classes.

6. **Reader in French**—Must have experience of teaching postgraduate classes and of guiding and conducting research work.

7. **Reader in Modern History**—Must have specialization in erstwhile Portuguese Colonies in Asia and Africa and must have experience of teaching post-graduate classes for at least 10 years and guiding and conducting research work in Modern History and must have done independent research work of recognized merit.

8. **Reader in Economics**—Must have done independent research work of recognized merit and experience of teaching post-graduate classes and of guiding and conducting research work. Must have specialization in Statistics/Econometrics.

9. **Reader in Economics**—Must have specialisation in Industrial/Agricultural Economics. Preference will be given to specialization in Industrial Economics. Must have considerable experience of teaching post-graduate classes or evidence of three years of post-doctoral research.

10. **Reader in Sociology**—Must have done independent research work of recognised merit and must have experience of teaching post-graduate classes and of guiding and conducting research work. Must have specialization in Social Change.

11. **Reader in Mathematics**—Must have specialization in Applied Mathematics, Fluid Mechanics, Control and Optimization Theory and considerable experience of teaching post-graduate classes or evidence of three years of post-doctoral research of high quality.

12. **Reader in Mathematics**— Must have specialization in Mathematical Analysis or Theory of Differential Equations or Functional Analysis or Algebra. Must have considerable experience of teaching post-graduate classes or evidence of three years of post-doctoral research.

13. *Reader in Physics—Must have* to their credit independent research work of recognised merit in the area of Nuclear Magnetic Resonance Studies and must possess experience of teaching post-graduate classes and guiding advanced research.

14. **Reader in Physics**—Must have specialisation in Electronic Instruments and considerable experience of teaching post-graduate classes or evidence of three years of post-doctoral research.

15. **Reader in Chemistry**—Must have specialization in Physical Chemistry and particularly in Chemical Physics or Chemical Instrumentation *or Polymers or Spectroscopy* or Kinetics. Must have experience of teaching post-graduate classes and guiding and conducting research.

16. **Reader in Marine Science**—Must have a wide background and general competence in any area of Marine Biological Sciences and must have done independent research work of recognised merit. Must possess considerable experience of teaching post-graduate classes and of guiding and conducting research work.

17. **Lecturer in Marine Science**—Must have specialisation in Marine Chemistry. Experience of teaching *post-graduate classes* and of guiding and conducting research work will be preferred.

18. **Lecturer in Economics**—Must have done independent research work of recognized merit. Experience of teaching post-graduate classes and of guiding and conducting research work. Must have specialization in Regional Planning.

19. **Lecturer in Philosophy**—Must have specialisation in Symbolic Logic and experience of teaching post-graduate classes or guiding and conducting research.

20. **Lecturer in Chemistry**—Must have specialization in Physical/Inorganic Chemistry and experience of teaching post-graduate classes and of guiding and conducting research work.

Eight copies of the application, in the prescribed form, should be sent in an envelope superscribed with "Application for the temporary post of ...." so as to reach the Registrar (Teaching Appointments Unit), University of Bombay, Bombay-400032, **on or before Monday, 7th July, 1980**. Candidates from abroad, Andaman & Nicobar Islands and Lakshadweep may send their applications so as to reach the Registrar **on or before Monday, 21st July, 1980. Applications received after the last date will not be considered.**

Prescribed forms of application can be had in person, free of charge, from the Teaching Appointments Unit, Registrar's Office, (RoomNo. 110), University of Bombay, Fort, Bombay-400032. Requests for supply of a set of eight prescribed forms by post should be made sufficiently in advance with a self-addressed stamped (Rs. 1.80) envelope of the size of 27 x 12 cms.

Candidates should send with every application a crossed Indian Postal *Order or a crossed Demand Draft* on a scheduled bank for Rs. 10/- drawn in favour of the Registrar, University of Bombay, payable at Bombay, as application fee. Candidates who apply for more than one post should send separate applications along with the requisite fee by means of a crossed Indian Postal Order/Demand Draft. Money orders or cheques or cash will not be accepted by the University. The fee will not be refunded once an application has been received by the University.

Incomplete applications and applications without the requisite fee will *not be considered. Applications on* plain paper will not be considered.

Candidates are advised to satisfy themselves before applying that they possess the prescribed qualifications and it is for the candidates themselves to ensure that they possess the prescribed qualifications. No inquiry asking for advice as to eligibility will be entertained.

Candidates called for interview will have to present themselves at their onw expenses. Canvassing, direct or indirect, will be a disqualification.

NOTE: **Persons who had applied for the above mentioned posts in response to the previous advertisements dated 10th June, 1977 and 23rd August, 1978 should apply afresh if they are interested in the posts.**

G.M. Rajarshi
REGISTRAR

AWADHESH PRATAP SINGH UNIVERSITY

REWA (M.P.)

Advertisement No. Estt./18/80/1041-1042
Dated : 29-5-80

Applications in the prescribed form are invited for the following posts so as to reach the Registrar A.P.S. University, Rewa on or before **29 June 80**. Each application shall be accompanied by a crossed Indian Postal Order for Rs. 10/- (Rupees ten only) payable to the Registrar A.P.S. University, Rewa.

Department—Environmental Biology
Reader—One
Lecturer— One

Scale of Pay
Reader : 1100-50-1600.
Lecturer : 620-40-900-50-1400.

Qualifications

(A) The candidates for all the above posts should possess a 1st or 2nd class Master's Degree of an Indian University or an equivalent qualification of a Foreign University in the subject concerned with at least 50 % (B in the seven point scale) in the subject concern and a Doctorate Degree.

(B) At least 50% marks at the Higher Secondary/Intermediate/Pre-University Examinations as the case may be.

(C) At least 50% marks in the Bachelor's Degree Examination on the basis of which division is awarded at the degree level by the University and.

Provided that the candidates for the appointment to the post have an average of 55% of the two examinations prior to Master's degree (Irrespective of the marks obtained in any of the two examinations, or 50% in marks in each of the two examinations separately).

N.B. The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of Schedule caste/Schedule tribe candidates.

(D) Teaching experience of 5 years and 3 years experience of guiding research is essential for the post of Reader.

(i) Knowledge of Hindi shall be a desirable qualification for the above posts.

(ii) Experience of teaching Degree/Postgraduate classes will be desirable qualification for the post of Lecturer.

Provided that if the Selection Committee is of the view that present work of a candidate evident either from his thesis or from his published research work is of very high standard it may relax any of the qualification prescribed in B & D above.

Specialization :

For the post of Lecturer

M.Sc. Microbiology/Environmental Biology/Botany/Zoology/Bioscience, Ph.D.

Specialization : Microbiology.

For the post of Reader

M.Sc.—Environmental Biology/Bio Science/Botany/Zoology/Bio-Physics. Ph.D.

Specialization :

Endocrinology/Cell Biology & Developmental Biology/Bio-Physics/Cytogenetic/Limnology.

2. The above pay scales are carrying with them dearness allowance and the benefit & contributory Provident fund and other allowances in accordance with the rules of the University.
3. Applications should be made on the prescribed form obtained from the University office on payment of Rs. 5/- (Five only) in the shape of a crossed Indian Postal Order payable to the Registrar, APS University, Rewa. Applications must be supported with the marksheets of the qualifying examinations.
4. Candidates already in service should apply through proper channel.
5. Candidates selected for interview will be requested to travel at their own expenses.
6. The University reserves the right to fill up or not to fill up the posts advertised and or to call only selected candidates for interview.
7. 16% seats are reserved for schedule caste/20% Schedule tribe/3% Handicapped candidates. But if no candidates is found suitable the posts will be filled up from amongst general category.

Note : Previous advertisement No. Dev. 50/79/2755-2939 Dt 9-8-79 & No Dev /80/6363-6406 Dt. 7-1-80 regarding the above posts are hereby cancelled.

REGISTRAR

MAHARSHI DAYANAND UNIVERSITY ROHTAK

Entrance Scholarship—1980

Maharshi Dayanand University, Rohtak, will award 140 scholarships with effect from the academic session 1980-81 on the basis of a competitive examination to be held on 13th July, 1980.

Out of these, 90 scholarships of the value of Rs 100/- p.m. each tenable for three years will be available for the students joining University's Three Year's Honours' Course in the subjects of English, Hindi, Sanskrit, Economics, History, Political Science, Chemistry, Physics, Mathematics and Commerce. The balance 50 scholarships of the value of Rs 200/- p.m. each will be available for the students joining Two Years' Postgraduate course in English, Hindi, Sanskrit, Economics, Political Science, Business Management, Commerce, History, Physics. Chemistry, Mathematics & Sociology. These scholarships will be tenable for two years.

Though tenable for three years for those joining Three Years' Honours' Course and for two years for those joining post-graduate course in the above mentioned subjects, continuance of scholarships from year to year will be dependent on annual performance of scholarship holders.

The condition of eligibility to appear in the Entrance Scholarships Examination will be (i) Haryana domicile and (ii) atleast 60% marks in Pre-University or equivalent examinations for those joining Three Years' Honours' Course and the same percentage of marks in B.A./B.Sc./B Com. or equivalent examinations for those joining a post-graduate course.

Application forms and brochure containing detailed information including syllabus for this examination can be had from the Assistant Registrar (Regn. & Sch.), Maharshi Dayanand University, Rohtak-124001 by sending a self-addressed envelope affixed with 0.50p. stamps. The last date for the submission of forms is **30th June.**

REGISTRAR

UNIVERSITY NEWS, JUNE 15, 1980. Regd. No. R.N. 7180/62 Postal Regd. No. D(C)-534

NORTH EASTERN HILL UNIVERSITY
SHILLONG—1

No. Advt./P-5/80 **Dated : 21-5-1980.**

Applications are invited for the following posts in the two constituent Colleges of the University.

Sl. No.		No. of Vacancy	Scale of Pay
1.	Associate Professor/Reader in Agronomy	1	Rs. 1200-50-1500-60-1900/-
2.	Associate Professor/Reader in Agriculture Botany.	1	-do-
3.	Associate Professor/Reader in Agri. Zoology & Entomology.	1	-do-
4.	Associate Professor/Reader in Horticulture	1	-do-
5.	Associate Professor/Reader in Extension	1	-do-
6.	Associate Professor/Reader in Agri. Chemistry & Soil Science.	1	-do-
7.	Associate Professor/Reader in Economics	1	-do-
8.	Associate Professor/Reader in Animal Husbandry	1	-do-
9	Associate Professor/Reader in Agril. Engineering	1	-do-
10.	Assistant Professor/Lecturer in Plant Pathology	1	Rs.700-40-1100-50-1600/-
11.	Assistant Professor/Lecturer in Horticulture	1	-do-
12.	Assistant Professor/Lecturer in Agril. Zoology & Entomology	1	-do-
13.	Assistant Professor/Lecturer in Extension.	1	-do-
14.	Assistant Professor/Lecturer in Chemistry & Soil Science	1	-do-
15.	Assistant Professor/Lecturer in Economics	1	-do-
16.	Assistant Professor/Lecturer in Animal Husbandry	1	-do-
17.	Assistant Professor/Lecturer in Agril Engineering	1	-do-
18.	Lecturer in Economics	2	-do-
19.	Lecturer in Mathematics	1	-do-
20.	Lecturer in Chemistry	1	-do-
21.	Lecturer in Philosophy	1	-do-

Sl. No. 1 to 17 are for College of Agriculture, Medziphema, Nagaland and Sl. No. 18 to 21 are for Pachhunga University College, Aizawl, Mizoram.

Essential Qualifications

Sl. 1 to 9

(a) Good academic record with a doctoral degree or equivalent published work.

(b Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

(c) Ability to interact with other disciplines.

(d) About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer, or in an equivalent position. This condition may be relaxed in the case of candidates having outstanding research work.

Sl. 10 to 21.

(a) A doctoral's degree or research work of a high standard, and

(b) Consistently good academic record with 1st or high 2nd Class ('B' in the seven point scale) Master's degree in a relevant subject or equivalent degree of a foreign University. Having regard to the need for developing interdisciplinary programmes, the degree in(a) above may be in relevant subjects.

Desirable

Sl. No. 1 : Experience in Agril. Metereology/Climatology.
Sl. No. 2 : Experience in paddy/maize/sugar-cane research.
Sl. No. 3 : Experience in pests of field/horticulture crops.
Sl. No. 4 : Experience in vegetable/plantation/fruit crops.
Sl. No. 5 : Experience of working in rural areas.
Sl. No. 6 : Experience in soil & plant analysis in relation to Agri. fertility evaluation.
Sl. No. 7 : Knowledge in rural banking.
Sl. No. 8 : Experience in animal nutrition/animal breeding/live-stock production and management.
Sl. No. 9 : Experience in soil water Engg. / management / farm machinery.

Candidates appointed should be prepared to serve anywhere within the jurisdiction of the North-Eastern Hill University, although presently they will be posted at Medziphema, District Kohima, Nagaland and Aizawl, Mizoram as specified in the advertisement.

Applications on plain paper indicating name, present address, age, qualifications in detail, etc. etc., should reach the undersigned on or before **30th June, 1980** together with an Indian Postal Order for Rs. 5 (Rs. 2.50 in case of Scheduled Caste/Scheduled Tribe candidates) payable to the "North Eastern Hill University", Shillong as application fee.

NOTE

1. Persons in service should submit their application through their employers.
2. Candidates called for interview will have to appear before the Selection Committee at the office of the North-Eastern Hill University or at any place specified. A return second class railway fare will be paid by the University.
3. All appointments will be subject to a period of probation.
4. These posts are open to all citizens of India who satisfy the required qualifications but some preference may be given to equally qualified Scheduled Caste/Scheduled Tribe candidates.
5. The University reserves the right to make appointment under statute 21 of the Act, if necessary.

Mrs. M.R. Mawlong
REGISTRAR

UTKAL UNIVERSITY
Vani Vihar, Bhubaneswar-4

Advt. No. Estt.I/886-C/10752/80,
Dated 7-6-1980

Wanted five Lecturers in Law (Whole-time), one Part-time Lecturer in Taxation Law, thirteen Part-time Lecturers in Law and one Lecturer in Mathematical Economist for the Utkal University in the U.G.C. Scales of pay, possessing the U.G.C. and University prescribed qualifications. Last date of application is the **30th June, 1980**. Candidates who have applied earlier in complete form in response to the advertisement No. Estt.I/886-C/17699/79, dated 24-8-79 and No. Estt. I/886-C/32682/79, dated 18-12-79 need not apply again.

Prescribed application forms and other details for the various posts can be had from the Registrar of the University in person on payment of Rs. 7.49 paise only or by post on receipt of a crossed Indian Postal Order for Rs. 9/- (Rupees nine) only payable to the Registrar, Utkal University, Vani Vihar, Bhubaneswar-4.

REGISTRAR

Printed & Published by ANJNI KUMAR, on behalf of the Association of Indian Universities (formerly known as Inter-University Board of India), Rouse Avenue, New Delhi - 110002
Grams : UNIBOARD. Phone : 276504 and 273037. Printed at NEW INDIA PRESS, NEW DELHI-1